



King County

Metropolitan King County Council Capital Budget Committee

AGENDA ITEM No.:	<u>7, 8</u>	DATE:	<u>January 30, 2008</u>
Ordinance No.:	<u>2007- 0443 2007-0444</u>	PREPARED BY:	<u>Jennifer Giambattista Patrick Hamacher Mark Melroy</u>

STAFF REPORT

SUMMARY:

The County's centralized data center is currently located in leased space in the Seattle Municipal Tower. In August of 2007, the Executive transmitted legislation that would move the data center to "Building Five" of the Sabey Center, which is located at 3355 South 120th Place, Seattle Washington.

Proposed Ordinance 2007-0443 would designate Building Five as the county's enterprise data center location and would authorize the Executive to enter into a thirty-year lease for 11,474 square feet in Building Five. Terms of the lease are generally described by a "letter of intent", which is Attachment A to the proposed ordinance.

Proposed Ordinance 2007-0444 is a supplemental appropriation request that would authorize the Executive to spend up to \$17.1 million in 2007 to pursue relocation of the data center from the Seattle Municipal Tower into Building Five of the Sabey Center. This request would fund capital investment activities including data center infrastructure improvements, relocation planning, and a project contingency reserve.

These ordinances were reviewed by the Capital Budget Committee at meetings on September 5 and September 19, 2007. At that time, council staff highlighted a number of outstanding issues and received additional points of inquiry from Councilmembers.

Since those hearings, negotiations on a lease agreement between King County and Sabey corporation have continued. The Council's legal advisor has reviewed the documents and has provided comments that were incorporated into the document and transmitted to Sabey corporation on January 23, 2008. Responses from Sabey corporation have not been received at the time this staff report was drafted. As such, terms of the agreement are not memorialized and action by the Committee would be premature.

SCOPE

The proposed lease comprises a total of 11,474 square feet of space in Building Five of the Sabey Center. 7,745 square feet of this space would be dedicated to data center operations on the second floor and the remaining 3,729 square feet would be used for office and administrative purposes on the first floor. Under this proposal, the county will have the first right of refusal for an additional 3,729 square feet.

The section below itemizes the funding request for this proposal.

Table 1: Funding Request Breakdown

Type of Expense	2007-0444	2008 Est.
Tenant Improvements (Per Lease)	\$7,000,000	
Core Infrastructure	774,000	
Network Equipment	2,352,477	
Telephone Systems	206,019	
Wireless Connectivity	6,210	
Data Center Operations	31,309	
I-Net Equipment	117,811	
Fiber Costs	3,119,293	
Systems Engineering		647,955
Relocation Consultant	1,000,000	500,000
Physical Move Costs		1,108,824
FMD Staffing Costs	348,000	
Auxiliary Servers - Fortress	331,098	
OIRM Staffing Costs	309,355	707,807
Project Contingency	1,400,000	
Sazan Consultant Costs	75,000	
Total	\$17,070,572	\$2,964,586

NEXT STEPS:

Council staff will continue working with executive staff to ready both pieces of legislation for Committee review.

INVITED:

Kurt Triplett, Chief of Staff to the King County Executive
Kathy Brown, Division Director, Facilities Management Division
Bob Cowan, Director, King County Office of Management and Budget
CherylAnn Boudreau, Project Manager, Office of Information Resource Management
David Martinez, Chief Information Officer, Office of Information Resource Management
Bob Thompson, Program Manager, Facilities Management Division

ATTACHMENTS:

1. Proposed Ordinance 2007-0443
2. Proposed Ordinance 2007-0444
3. Transmittal Letter including fiscal note, dated August 20, 2007



Signature Report

January 29, 2008

Ordinance

Proposed No. 2007-0443.1

Sponsors Constantine and Phillips

1 AN ORDINANCE regarding facilities for important county
2 functions; designating Sabey Data Center, Building Five as
3 the county's enterprise data center location, and authorizing
4 the King County executive to enter into a thirty-year lease
5 agreement for 11,474 square feet of space, located at the
6 Intergate East technology campus, 3355 South 120th Place,
7 in Seattle, Washington, to be used for a data center facility,
8 located in council district 8.

9
10 BE IT ORDAINED BY THE COUNCIL OF KING COUNTY:

11 SECTION 1. The King County executive is hereby authorized to execute a thirty
12 year lease with Sabey Corporation for approximately 11,474 square feet of space located
13 at Sabey Data Center – Building 5 at the Intergate East Technology campus, 3355 South
14 120th Place, Seattle, Washington consistent with the applicable terms and conditions
15 described in Attachment A to this ordinance, Proposal for King County Data Center at
16 Sabey Data Center – Building 5 and containing the usual and customary terms for such a
17 lease.

18 SECTION 2. The appropriate county officials, agents and employees are hereby
19 authorized to take all actions necessary to implement the lease and all actions up to now
20 taken by county officials, agent and employees consistent with the terms and purposed of
21 the lease agreement are hereby ratified, confirmed and approved.

22 SECTION 3. If any one or more of the covenants or agreements provided in this
23 ordinance to be performed on the part of the county is declared by any court of competent
24 jurisdiction to be contrary to law, then such covenant or covenants, agreement or
25 agreements are null and void and shall be deemed separable from the remaining
26 covenants and agreements of this ordinance and in no way affect the validity of the other
27 provisions of this ordinance or of the lease.

28 SECTION 4. The King County executive is hereby authorized to execute a thirty-
29 year lease under the terms and conditions described in Attachment A to this ordinance,
30 Proposal for King County Data Center at Sabey Data Center – Building 5 at the following
31 location: 3355 South 120th Place, Seattle, Washington. In accordance with K.C.C.
32 4.04.040, the King County council may adopt an ordinance permitting the county to enter

Ordinance

33 into contracts requiring the payment of funds from the appropriation of subsequent fiscal
34 years.
35

KING COUNTY COUNCIL
KING COUNTY, WASHINGTON

ATTEST:

APPROVED this ____ day of _____, _____.

Attachments A. SABEY Datacenter Letter of Intent--Dated July 16, 2007, B. King County Data Center Design Criteria--Dated February 16, 2007



SABEY
DATACENTER

ATTACHMENT A.
2007-443

July 16, 2007

Mr. Jim Napolitano, Major Projects Manager jim.napolitano@metrokc.gov
King County, Dept of Executive Services
500 Fourth Avenue, Room 800
Seattle, WA 98104

Intergate.east
A TECHNOLOGY CAMPUS

Sabey is a \$500 million company with a 38-year history of solving problems creatively and efficiently. Our wide range of experience and customer-centric culture promotes close relationships and solution-oriented communication.

**Proposal for King County Data Center
at
Sabey Data Center- Building 5**

Dear Mr. Napolitano:

INTERGATE EAST, LLC, ("Landlord") which is a wholly owned subsidiary of SABEY CORPORATION appreciates the opportunity to present to King County, ("Tenant") this Letter of Intent for leasing data center and related space at Intergate Seattle. SABEY CORPORATION would be prepared to enter into a lease agreement incorporating the following business terms:

Space Requirements:

Tenant's premises shall consist of approximately:

- 7,745 sf data center space (6,684 of raised floor and 1,061 of UPS room space), based on final Tenant design. Tenant will have a Right of First Refusal on the adjacent 3,114sf ("Expansion Space").
- 3,729sf of office space.
- The exact allocation of square footage within Sabey DataCenter SDC5 to be agreed to in the final lease agreement, collectively the "Premises".
- All located in Building 5, 3355 South 120th Place, (SDC5), Seattle, WA 98165

Additional Space and First Right of Refusal:

Provided the Expansion Space is legally available, during the initial twenty-four (24) months of the Lease Term, Tenant shall have the right to lease the

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t: 206.281.8700 | f: 206.282.9951 | www.sabey.com

Expansion Space at the rate then being paid for the initial Premises. Landlord will construct all necessary Tenant Improvements in the same manner and subject to the same terms, program design criteria and conditions as the Tenant Improvements for the Premises.

In addition, Tenant shall have the ongoing Right of First Refusal on all or a portion of the Expansion Space. Landlord will deliver written notice to Tenant notifying them when, during the Term of the original Lease and any subsequent option periods, another qualified Tenant has delivered written interest in the subject space. Tenant will then have ten (10) calendar days to accept the additional space or release their interest, subject to Metropolitan King County Council approval. If Landlord's notification of the Right of First Refusal is within the initial twenty-four months of the Term, terms and conditions shall be as outlined in the preceding paragraph. If Landlord's notification is after the twenty-fourth month of the Term, Tenant shall accept the Expansion Space on the same terms and conditions as the third party offer.

Landlord Provided Services: Landlord will construct at its sole cost and risk per a mutually agreed design, an N+1 type data center to support a server load of 150 watts per square foot, server floor only and will provide office space per mutually agreed design, based on the program design criteria developed by the Sazan Group and titled "KING COUNTY Data Center Design Criteria", document dated February 16, 2007 and attached as Exhibit B to this Letter of Intent. Construction is to be completed and the Premises made available for occupancy by February 1, 2008. Preliminary budget estimates for the Tenant Improvements to the initial Premises and the expansion Premises are in excess of \$7,000,000 and \$4,000,000 respectively and shall be paid for entirely by Landlord.

Parking: Ample free, open parking is available. All open parking on site is on a non-reserved, first-come first-serve basis at no charge and Tenant shall have full access to said parking. Sabey maintains the right to reserve parking as required.

Commencement Date: Commencement Date is February 7, 2008. Landlord shall deliver to Tenant a reasonable construction schedule confirming this Commencement Date, within five (5) days of Landlord's execution of this Letter of Intent. Tenant shall be permitted access to the Premises forty-five (45) days prior to Lease Commencement for the purpose of installing furniture, fixtures and equipment.

Term: The initial term of the lease will be for twelve (12) years, and will include four renewal options for Tenant to extend the term on the same terms and conditions as the initial Lease. The first two renewal options will be for five (5) years each and the next two renewal options will be for four (4) years

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each with Tenant providing notice of its intention to renew no less than twelve (12) months in advance.

Office Space Rental Rate: Upon the Commencement Date, Tenant shall pay rent for the Office Space at \$1.67/sf/month Fully Serviced Gross with increases of three (3%) percent per year commencing upon the first anniversary of the Lease. There shall be no operating expense or tax pass-throughs beyond this rental rate.

Data Center Floor Rental Rate: Rates are based on a fully built out Tier 3 Type, 150 watts/sf, N+1 facility. Upon the Commencement Date, Tenant shall pay Base Rent for the Data Center Space at \$3.60/sf/month NNN with increases of three (3%) percent per year commencing upon the first anniversary of the Lease ("Base Rent"). In addition to the Base Rent, Tenant shall pay, as additional rent, reasonable expenses allocated to the Premises, and Tenant's share of applicable taxes and other expenses not directly billed to Tenant on a NNN basis as further defined below and in the lease:

- Real Estate Taxes
- Property Insurance
- Site, building and parking lot maintenance
- Standard water usage
- Standard sewer usage
- Common area Janitorial, five days a week
- Building and Fire monitoring
- Trash removal
- Interior and Exterior landscaping
- Property Management
- Facility and Common area power
- Roving security (24 X 7)
- Building engineers
- Misc. repair and maintenance
- Elevator service and maintenance

Tenant Capital Contribution: Tenant shall make a Capital Contribution of up to Seven Million Dollars (\$7,000,000) for the first 7,745sf of data center space within the 1st six months of Tenancy. If Tenant expands into the adjacent 3,114square feet, Tenant shall make a Capital Contribution of up to Four Million Dollars (\$4,000,000) within six (6) months of occupancy of the expansion Premises.

Operations Costs: Operations costs on the Data Center space will be on a pass through basis not to exceed \$2.15/sf/month in the initial year of the Lease and subject to actual increases thereafter.

CAM Charges: Current CAM charges on the Data Center space will be on a NNN pass through basis not to exceed \$0.87/sf/month in the initial year of the Lease and subject to actual increases thereafter.

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- Move Costs:** Based on King County estimates, physical move costs are projected at One Million Dollars (\$1,000,000.00). If desired by Tenant, Landlord will provide reasonable financing for this amount.
- Tenant's Electrical Charges:** Tenant's power consumption will be separately metered and passed through on a consumable basis with no mark up from the utility provider. Power will be metered from the electrical and mechanical systems designed to support the data center floor space leased by Tenant.
- Security Deposit:** No security deposit required.
- Fiber:** The current list of available fiber providers terminated in the building are AT&T, Qwest and Abovenet. ELI/Integra currently provides service to the building and XO Communications has a non-terminated fiber into the building. Other carriers with facilities in the Intergate.Seattle Campus fiber loop system include; OnFiber/Qwest, Level 3, McLeodUSA and TimeWarner Telecom. Tenant shall have the right to connect with any and/or all fiber and other telecommunication providers free of Landlord charge. Landlord will not unreasonably limit utility, telecommunications or fiber service. Tenant will be responsible for any connection fees including NRC & MRC.
- Antenna/Satellite Dishes:** The lease will allow Tenant to install and maintain rooftop antennas/satellite dishes, and to run necessary conduit and cabling from antenna back to the Premises during the term of the lease. The exact square footage and lease cost to be agreed to in the final lease agreement.
- Building Operating Hours:** Tenant's employees will have 24 x 7 access to the facility.
- Permits and Approvals:** Landlord shall be responsible for obtaining all permits, licenses and approvals necessary to construct the Project and shall pay all associated fees and costs.
- Design for Tenant Improvements:** Landlord shall be responsible for completion of design and for engaging such architects, consultants, engineers and the like as may be required to design the Project. Landlord and Tenant shall agree to the conceptual design prior to entering into a Lease agreement. Modifications and refinements to this plan may be made, provided the key elements and assumptions of the plan are carried forward into final design. Tenant shall have the right to review, inspect and approve the work related to the design of the Project on an ongoing basis provided that any approval does not delay construction or if delayed, parties agree to extend delivery date. Landlord shall construct the Project in accordance with the approved design at its sole expense.
- Construction:** Landlord shall oversee and manage construction of the Project and engage an experienced, qualified general contractor to perform Landlord's work. All

costs associated with construction of the Project shall be borne by the Landlord. No cost of construction shall ever become an obligation of Tenant. Tenant shall receive notice of all change orders with sufficient notice to give it time to provide comments and approval or disapproval prior to implementation, provided that any approval does not delay construction or if delayed, parties agree to extend delivery date. In addition, Tenant may only make recommendations that affect the space directly rentable by Tenant. All costs in excess of the final, not to exceed, budget shall be borne by the Landlord, except net costs for design changes requested by Tenant after approval of the 100% design. Costs in excess of the final, not to exceed, budget that are associated with such change may be charged to King County only as additional rent. King County shall have the right to engage its own consultants and attend periodic inspections of the Project at Tenant expense. Landlord shall be solely responsible for maintenance and repair of all tenant improvements except as otherwise set out in the final lease, normal wear and tear excepted. At no time during this Lease shall Tenant be in privity of contract with, or financially responsible to, any of Landlord's contractors. Upon substantial completion of the Project, Landlord, shall warrant, among other things, that the Project has been completed in substantial accordance with all contract documents, and at all times for the period equal to the later of the warranty period from the contractor or one year following the date of substantial completion is free from defects in workmanship and materials in connection with the construction thereof.

- Prevailing Wage:** Landlord shall ensure that prevailing wage is paid for all labor associated with construction of the Project.
- Liquidated Damages:** Landlord shall agree to pay liquidated damages, in the form of cash or rent credits, calculated in thirty (30) day increments, should the Tenant Improvements not be substantially complete by February 28, 2008. If the Tenant Improvements are not substantially complete by April 1, 2008, Tenant shall have the right to terminate the Lease without further obligation or responsibility.
- Security:** The Lease shall include security provisions as mutually agreed, ensuring that King County shall have sufficient control of access and protection of the Premises as are required to carry out its purpose and function. Any costs associated with providing security provisions over and above building standard, will be the responsibility of the Tenant.
- Insurance:** Landlord and King County shall each maintain appropriate insurance or self-insurance, as the case may be, for their respective liability associated with the Property.
- Liens:** The Lease shall include commercially reasonable terms concerning liens on the Project and Premises.

Duty to Cooperate:

Both parties commit to working together in good faith so that Landlord can commence construction of the Project and deliver the Premises to King County as soon as possible. To that end, Landlord and Tenant shall establish mutually acceptable review and approval dates to facilitate a timely delivery. It is recognized that Tenant is in need of the described space in a very short time and that these type of facilities are complicated to build. Tenant and Landlord agree to work cooperatively and expeditiously to meet the requested timeline.

Legal Authority:

King County represents and warrants to Landlord that upon the King County Council's approval of this Letter of Intent, King County shall have the legal authority to negotiate, execute and deliver the Lease without further Council or other approval, and such Lease shall be binding against King County.

Brokerage:

A fee will be paid to Washington Partners, Inc., based on a separate agreement at \$7.50 per square foot. The fee shall be paid within thirty (30) days of Lease execution. Landlord and Tenant confirm receipt of "The Law of Real Estate Agency" as required under RCW 18.86.030.

This Letter of Intent does not create any legal rights or obligations to either party, but rather summarizes the key business terms of our offer. All of the legal rights and obligations of the parties will be set forth in the lease agreement. Please confirm that this Letter of Intent accurately sets forth your understanding of the key business terms by signing the enclosed copy of this Letter and returning it before July 20 2007.

Should you have any questions, please do not hesitate to call. We look forward to working with you.

Sincerely,

SABEY CORPORATION, as agent for
International Gateway East LLC

Enclosure

ACCEPTED AND APPROVED:

Jim Napolitano
King County

John Ford
SABEY CORPORATION, as agent for
International Gateway East LLC

By: *Matthew Brown*

By: *John Ford*

Its (Title): *FUND Director*

DIRECTOR
Its (Title): *TECHNOLOGY REAL ESTATE*

Date: *7/27/07*

Date: *7/16/07*

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ATTACHMENT B.
2007-443

Sazan
Group
Inc.

KING COUNTY
Data Center Design Criteria

Due Date:

February 16, 2007

Prepared For:

King County
Facilities Management Division
Seattle, WA

Prepared By:

Sazan Group, Inc.

720 Olive Way
Suite 1525
Seattle, WA 98101
Tel (206) 267-1700
Fax (206) 267-1701

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ELECTRICAL

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GENERAL PROVISIONS

1.0 SCOPE

1.1 General Requirements

- A. The following is a summary of the Scope of Work for design and construction of the architectural, mechanical, electrical, and communications cabling of the new consolidated King County Data Center.
- B. The Building Owner is responsible for the design process, including the Owner's Design Architect and Contractor. All lines of communication shall be directed through King County's project manager David Millar, Facilities Management (tel 206/296-0239).

1.2 Purpose

- A. This document is intended for use by designers who need a comprehensive understanding of the architectural, mechanical, and electrical features of the data center design including the facility planning, the cabling system, and the network design.
- B. The design criteria and standards contained within are the minimums acceptable for efficiency, economy, durability, maintainability, and reliability of the mechanical HVAC, and electrical power supply and distribution systems.
- C. Clarifications of baseline design criteria, standards, policy, and guidance should be obtained through the normal communications channels established between the owner and contractor.

1.3 Design-Build Process

- A. The Design team is strongly encouraged to recommend cost saving material, equipment, and/or design alternatives.
- B. Provide all labor, materials, equipment, tools, plant, and reproduction services necessary for the development and delivery of complete design and construction for architectural, HVAC, plumbing, fire protection, power, lighting and alarm systems as described hereinafter.
- C. Provide the necessary resources to complete the work expeditiously and within requirements of published project schedule.
- D. Provide all items and work required to implement a fully functional data center. This includes all incidentals, equipment, appliances, services, scaffolding, supports, tools, supervision, labor, consumable items, fees, licenses, etc., necessary to provide complete systems.
- E. Provide all services necessary for startup, commission, and check out each item and system to provide fully operable systems.

2.0 DELIVERABLES AND DESIGN QUALIFICATIONS

- A. Complete engineering plans, specifications, and calculations for the project shall be prepared and submitted to the Owner along with estimates of probable construction costs.
- B. These documents shall be prepared, signed, and sealed by Professional Engineers, Architects, and Registered Communications Distribution Designers (RCDDs) licensed to practice in the State of Washington, and who are regularly engaged in the design of similar facilities and systems.

3.0 REVIEWING AUTHORITY AND DESIGN APPROVALS

3.1 General

- A. Comply with all applicable governmental regulations. Comply with all Federal, State, City, and other applicable codes and ordinances.
- B. If any conflict arises between the Specifications or codes and ordinances, immediately notify the Owner.

3.2 King County

- A. King County will have the final decision with respect to system concepts, visual coordination, and acceptance of proposed products.
- B. Design elements related to the telecommunications physical infrastructure are subject to review and approval by King County OIRM.
- C. See submittal requirements hereinafter.

3.3 Local Authorities

- A. Submit engineering plans, specifications, and calculations to local authorities for review in accordance with reviewing agencies instructions.
- B. Obtain and pay for all permits and pay all fees required by authorities having jurisdiction for work. Pay all royalties or fees required in connection with the use of patented devices and systems.
- C. Arrange for and schedule all tests required by authorities having jurisdiction and public or private utilities.
- D. During construction do not deviate from approved drawings and specifications nor install any work that may be in conflict with codes and ordinances.

3.4 Owners Representative

- A. Owner will retain Sazan Group, Inc. to act on the Owner's behalf as advisors on technical matters of interest to the Owner. Their involvement in this project shall, in no way, alleviate the statutory and professional requirements and obligations of the design and construction team as the Professional Engineer of Record. The review of designs or installations shall, in no way, reduce or diminish the obligation, responsibility or liability of the design and construction team or their professional consultants.

4.0 REFERENCES

- A. The publications listed below form a part of this document to the extent referenced. The publications are referred to within the text by the basic designation only.

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR CONDITIONING ENGINEERS (ASHRAE)

AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)

ASTM INTERNATIONAL (ASTM)

- ASTM B 1 (2001) Hard-Drawn Copper Wire
- ASTM B 8 (2004) Concentric-Lay-Stranded Copper Conductors, Hard, Medium-Hard, or Soft
- ASTM D 709 (2001) Laminated Thermosetting Materials

ELECTRONIC INDUSTRIES ALLIANCE (EIA)

- ANSI/TIA-942 (2005) Telecommunications Infrastructure Standard for Data Centers
- EIA TIA-455-21-A (1988) FOTP-21 - Mating Durability of Fiber Optic Interconnecting Devices
- TIA/EIA-492AAAA-A (1998) 62.5-um Core Diameter/125-um Cladding Diameter Class 1a Graded-Index Multimode Optical Fibers (ANSI/TIA/EIA-492AAAA-A)
- TIA/EIA-492CAAA (1998; R 2002) Class IVA Dispersion-Unshifted Single-Mode Optical Fibers
- TIA/EIA-526-14A (1998) OFSTP-14A Optical Power Loss Measurements of Installed Multimode Fiber Cable Plant (ANSI/TIA/EIA-526-14A)
- TIA/EIA-526-7 (1998) OFSTP-7 Measurement of Optical Power Loss of Installed Single-Mode Fiber Cable Plant (ANSI/TIA/EIA-526-7)
- TIA/EIA-568-B.1 (2001; Addendum 2001) Commercial Building Telecommunications Cabling Standard - Part 1: General Requirements (ANSI/TIA/EIA-568-B.1)
- TIA/EIA-568-B.2 (2001) Commercial Building Telecommunications Cabling Standard - Part 2: Balanced Twisted Pair Cabling Components (ANSI/TIA/EIA-568-B.2)
- TIA/EIA-568-B.3 (2000; Addendum 2002) Optical Fiber Cabling Components Standard (ANSI/TIA/EIA-568-B.3)
- TIA/EIA-569-A (1998; Addenda 2000, 2001) Commercial Building Standards for Telecommunications Pathways and Spaces (ANSI/TIA/EIA-569-A)
- TIA/EIA-598-B (2001) Optical Fiber Cable Color Coding
- TIA/EIA-604-10A (2002) FOCIS 10 Fiber Optic Connector Intermateability Standard - Type LC
- TIA/EIA-604-2 (1997; R 2002) FOCIS 2 Fiber Optic Connector Intermateability Standard

TIA/EIA-604-3A	(2000) FOCIS 3 Fiber Optic Connector Intermateability Standard - Standard Type SC
TIA/EIA-606-A	(2002) Administration Standard for the Telecommunications Infrastructure (ANSI/TIA/EIA-606)
EIA-310-D	(1992) Racks, Panels, and Associated Equipment
TIA J-STD-607-A	(2002) Commercial Building Grounding (Earthing) and Bonding Requirements for Telecommunications

INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE)

IEEE C12.7	(1993; R 1999) Requirements for Watt-hour Meter Sockets
IEEE Std 81	(1983) Guide for Measuring Earth Resistivity, Ground Impedance, and Earth Surface Potentials of a Ground System (Part 1) Normal Measurements
IEEE Std 100	(2000) The Authoritative Dictionary of IEEE Standards Terms
IEEE Std 1100	(IEEE Emerald Book) IEEE Recommended Practice for Powering and Grounding Electrical Equipment

INTERNATIONAL ELECTRICAL TESTING ASSOCIATION (NETA)

NETA ATS	(2003) Acceptance Testing Specifications
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INSULATED CABLE ENGINEERS ASSOCIATION (ICEA)

ICEA S-83-596	(2001) Fiber Optic Premises Distribution Cable
---------------	--

NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)

NEMA 250	(2003) Enclosures for Electrical Equipment (1000 Volts Maximum)
NEMA C12.1	(2001) Code for Electricity Metering
NEMA C80.1	(1994) Rigid Steel Conduit - Zinc Coated (GRC)
NEMA C80.3	(1994) Electrical Metallic Tubing - Zinc Coated (EMT)
NEMA FU 1	(2002) Low Voltage Cartridge Fuses
NEMA KS 1	(2001) Enclosed and Miscellaneous Distribution Equipment Switches (600 Volts Maximum)
NEMA MG 1	(2003; R 2004) Motors and Generators
NEMA ST 20	(1992; R 1997) Dry-Type Transformers for General Applications

NEMA WC 63.1	(2000) Twisted Pair Premise Voice and Data Communications Cables
NEMA WC 66	(2001) Category 5e and Category 6 100 Ohm Shielded and Unshielded Twisted Pairs
NEMA WD 1	(1999) General Color Requirements for Wiring Devices
NEMA WD 6	(2002) Wiring Devices - Dimensional Requirements
NEMA Z535.4	(2002) Product Safety Signs and Labels

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 70	(2005) National Electrical Code
NFPA 70E	(2004) Electrical Safety in the Workplace

SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION, INC. (SMACNA), SEISMIC HAZARD LEVEL AA

SEATTLE, CITY OF, REQUIREMENTS

STATE OF WASHINGTON BUILDING CODES

US FEDERAL COMMUNICATIONS COMMISSION (FCC)

FCC Part 68	Connection of Terminal Equipment to the Telephone Network (47 CFR 68)
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UNDERWRITERS LABORATORIES (UL)

UL 1	(2005) Flexible Metal Conduit
UL 1010	(1995; Rev thru Mar 1999) Receptacle-Plug Combinations for Use in Hazardous (Classified) Locations
UL 1063	(1998; Rev thru Jun 2001) Machine-Tools Wires and Cables
UL 1242	(2000; Rev thru May 2003) Electrical Intermediate Metal Conduit
UL 1449	(1996; Rev thru Jul 2002) Transient Voltage Surge Suppressors
UL 1561	(1999; Rev thru Feb 2004) Dry-Type General Purpose Transformers
UL 248-1	(2000) Low-Voltage Fuses - Part 1: General Requirements
UL 248-2	(2000) Low-Voltage Fuses - Part 2: Class C Fuses
UL 248-4	(2000) Low-Voltage Fuses - Part 4: Class CC Fuses

UL 248-5	(2000) Low-Voltage Fuses - Part 5: Class G Fuses
UL 248-8	(2000) Low-Voltage Fuses - Part 8: Class J Fuses
UL 248-9	(2000) Low-Voltage Fuses - Part 9: Class K Fuses
UL 248-10	(2000) Low-Voltage Fuses - Part 10: Class L Fuses
UL 248-12	(2000) Low-Voltage Fuses - Part 12: Class R Fuses
UL 248-15	(2000) Low-Voltage Fuses - Part 15: Class T Fuses
UL 20	(2000; Rev thru Jun 2002) General-Use Snap Switches
UL 2043	(1996; R 2001, Jul. 2001) Fire Test for Heat and Visible Smoke Release for Discrete Products and Their Accessories Installed in Air-Handling Spaces
UL 360	(2003) Liquid-Tight Flexible Steel Conduits
UL 44	(2005) Thermoset-Insulated Wires and Cables
UL 467	(2004) Grounding and Bonding Equipment
UL 486A-486B	(2003; Rev thru Apr 2004) Wire Connectors
UL 486C	(2004) Splicing Wire Connectors
UL 489	(2002; Rev thru May 2003) Molded-Case Circuit Breakers, Molded-Case Switches, and Circuit-Breaker Enclosures
UL 498	(2001; Rev thru Oct 2002) Attachment Plugs and Receptacles
UL 5	(2004) Surface Metal Raceways and Fittings
UL 50	(1995; Rev thru Sep 2003) Enclosures for Electrical Equipment
UL 506	(2000; Rev thru Feb 2004) Specialty Transformers
UL 510	(2005) Polyvinyl Chloride, Polyethylene, and Rubber Insulating Tape
UL 512	(1993; Rev thru Mar 1999) Fuseholders
UL 514A	(2004) Metallic Outlet Boxes
UL 514B	(2004) Conduit, Tubing and Cable Fittings
UL 6	(2000; Rev thru May 2003) Rigid Metal Conduit
UL 67	(1993; Rev thru Nov 2003) Panelboards

UL 797	(2004) Electrical Metallic Tubing
UL 817	(2001; Rev thru Jan 2004) Cord Sets and Power-Supply Cords
UL 83	(2003; Rev thru Mar 2004) Thermoplastic-Insulated Wires and Cables
UL 869A	(1998) Reference Standard for Service Equipment
UL 870	(1995; Rev thru Jul 2003) Wireways, Auxillary Gutters, and Associated Fittings
UL 943	(2006) Ground-Fault Circuit-Interruptioners
UL 1286	(1999; Rev thru Oct 2002) Office Furnishings
UL 1666	(2000; Rev thru Jul 2002) Test for Flame Propagation Height of Electrical and Optical-Fiber Cables Installed Vertically in Shafts
UL 1863	(2004) Communication Circuit Accessories
UL 444	(2002; Rev thru Aug 2002) Communications Cables
UL 467	(2004) Grounding and Bonding Equipment
UL 50	(1995; Rev thru Sep 2003) Enclosures for Electrical Equipment
UL 910	(1998) Test for Flame-Propagation and Smoke-Density Values for Electrical and Optical-Fiber Cables Used in Spaces Transporting Environmental Air
UL 969	(1995; Rev thru Nov 2001) Marking and Labeling Systems

WASHINGTON STATE ENERGY CODE WITH SEATTLE AMENDMENTS

5.0 DEFINITION OF TERMS, ACRONYMS AND ABBREVIATIONS

5.1 General

- A. Unless otherwise specified or indicated, electrical and electronics terms used in this specification shall be as defined in TIA/EIA-568-B.1, TIA/EIA-568-B.2, TIA/EIA-568-B.3, TIA/EIA-569-A, TIA/EIA-606-A and IEEE Std 100 and herein.

5.2 Definitions

- A. **ADA:** Americans with Disabilities Act
- B. **BICSI:** Building Industry Consulting Service International is a professional telecommunications association.
- C. **County Enterprise Network:** The network commonly used to conduct county business that provides transport of data within and between county facilities and other agencies of county government. This definition also refers to the network used to transport data

between the county, other government agencies and the Internet. It does not refer to networks built for the sole purpose of meeting special operations needs of county business units which include, but are not limited to, process control and supervisory control networks. Nor does it refer to the King County Institutional Network (I-Net) which is required to meet contractual obligations with I-Net customers and the local cable utility.

- D. **Cross Zone Detection:** Cross Zone Detection is part of the National Fire Code. In the case of cross-zone detection, single detector activation shall cause an alarm signal to be generated; second detector activation shall generate a pre-discharge signal and start the pre-discharge condition. No single detector sets off the entire fire suppression system.
- E. **Entrance Facility (EF):** An entrance to the building for both private and public network service cables including the entrance point at the building for telecommunications equipment that serves the occupants of a building. Equipment housed therein is considered distinct from a telecommunications room because of the nature of its complexity.
- F. **Horizontal Cross-connect (HC):** An intermediate distribution point used to connect horizontal cable and cabling subsystems or equipment.
- G. **HVAC:** Heating, Ventilation and Air-Conditioning
- H. **Main Cross-connect (MC):** A distribution point in which the building backbone cables terminate and at which connections to the wide-area network may be made.
- I. **Open Cable:** Cabling that is not run in a raceway as defined by NFPA 70. This refers to cabling that is "open" to the space in which the cable has been installed and is therefore exposed to the environmental conditions of that space.
- J. **Open Office:** A floor space division provided by furniture, moveable partitions, or other means instead of by building walls
- K. **Pathway:** A physical infrastructure utilized for the placement and routing of telecommunications cable.
- L. **TBB:** Telecommunications Bonding Backbone
- M. **TGB:** Telecommunications Grounding Bus-bar
- N. **TMGB:** Telecommunications Main Grounding Bus-bar
- O. **Telecommunications Room (TR):** An enclosed space for housing telecommunications equipment, cable, terminations, and cross-connects. The room is the recognized cross-connect between the backbone cable and the horizontal cabling.
- P. **Work Stations:** Defined as any place a person may work. This includes reception areas, conference rooms, lunch rooms, day rooms, copier rooms, printer rooms, etc.

6.0 DESIGN CRITERIA

- A. The Subcontractors shall accept direction through the Contractor with respect to performance of their contractual obligations. Subcontractor shall have a designated project representative and a back-up representative, either or both of whom shall attend all meetings, whether regularly scheduled or not.
- B. Subcontractor shall meet with members of local regulatory authorities, utility companies and municipal service boards to coordinate their requirements with the project design and installation.

- C. King County reserves the right to review and comment on the design documents. Their reviews shall be in the form of comments which shall be considered either as interpretations of the design or clarification of the intent of the scope of work. Respond to these review comments with written acceptance or rejection of each comment. King County or its technical representatives will not accept responsibility for the technical design of the project, which remains the responsibility of the design and construction team.
- D. Design team is required to carry, as Architect and Engineers of Record, professional liability insurance (errors and omissions), of sufficient policy value and acceptable deductible, to cover their acts as Architect and Engineer of Record for this project. Furnish evidence of professional liability insurance coverage to the Owner for review and acceptance. Minimum policy coverage shall be \$2,000,000.

7.0 SUBMITTALS

7.1 General

- A. Submit all design drawings, calculations, and shop drawings to the Owner for review and comment.
- B. King County shall be the sole judge of a submittal's completeness. Incorporate all required information into the submittal as directed.
- C. Documents shall be reviewed and stamped by Engineer of Record prior to submittal. By virtue of reviewing and commenting on such calculations and shop drawings, King County and its Representatives do not accept any responsibility for the accuracy or appropriateness of the calculations, since that responsibility rests solely with the Design and Construction Team.

7.2 Submittal Requirements

- A. For Schematic and Design Development phases, submit as indicated below by discipline in accordance with the following:
 - 1. Schematic Phase: As a minimum, a single line layout for at a scale not less than 1:100 (1/8 inch). Submit a complete double line layout of areas of critical importance, at a scale of 1:50 (1/4 inch) including equipment.
 - 2. Design Development: Submit minimum 1:100 (1/8 inch) scale floor plans, new and renovated, incorporating all of the revisions required by comments from schematics.

7.3 Disciplines

- A. Plumbing
 - 1. Narrative
 - a. Existing plumbing systems to be used and necessary modifications
 - b. New plumbing systems
 - c. New or modified water treatment

2. Floor Plans/Drawings
 - a. Room names
 - b. Identify
 - 1) Existing plumbing fixtures
 - 2) New plumbing fixtures
 - 3) Existing equipment
 - 4) New equipment
 - 5) Plumbing piping
 - c. Size of pipe
 - d. Equipment schedule
 - e. Fire & smoke partitions
 - f. Demolition plans
 - g. Riser diagrams
 - h. Legend, notes, and details
 3. Location and size of sprinkler riser, standpipes, and fire pumps (see fire protection)
 4. Location of emergency eyewash and shower equipment
 5. Calculations (equipment & piping)
 6. List of Required Contract Specifications
 7. Contract Specifications
- B. Sanitary
1. Narratives:
 - a. Existing sanitary systems: underground water, sanitary sewers, storm sewers, and fuel gas with sources, disposal methods, storage pressures, condition, etc.
 - b. New sanitary systems
 - c. Provide water analysis & expected yield if well required
 - d. Circulation study to assess emergency vehicle access
 2. Utility Plans/Drawings showing existing and new sanitary systems:
 - a. Size of pipes
 - b. Invert elevations of sewers
 - c. Locate/size
 - 1) Pumps

- 2) Storage facilities
- 3) Treatment equipment
- 4) Fire hydrants
- 5) Sectional and post indicator valves
- 6) Backflow preventer
- d. Profiles of sanitary & storm sewers
- e. Demolition Plans
- f. Legend, notes, and details
3. Point of connection to sprinkler system
4. Calculations
5. List of specifications
6. Contract Specifications
- C. HVAC:
 1. Description of HVAC systems
 2. Equipment for each functional space
 3. Location/sizes:
 - a. Mechanical equipment room
 - b. Principal vertical shafts
 4. Block layout of equipment
 5. Louvers:
 - a. Outside air
 - b. Exhaust air
 - c. Relief air
 6. Engineering calculations³
 7. Selection of HVAC equipment
 8. Catalog cuts of equipment
 9. Room by room heating and cooling loads
 10. Zone by zone heating & cooling loads
 11. Building block heating & cooling loads

12. Psychometric chart for air handling unit
13. Coil entering and leaving conditions
14. Fan motor heat gains
15. Consumption of humidification loads
16. Sound/acoustic analysis
17. Room-by-room air balance charts⁴
18. Chilled water plant:⁵
 - a. Quantity and type of chillers
 - b. Capacity in tons of refrigeration
 - c. Electrical equipment
19. Heating system:
 - a. Total heating load
 - b. Domestic hot water load
 - c. Humidification load
 - d. Equipment steam demand
 - e. Zoning of heating system
20. HVAC floor plan:⁶
 - a. Main supply, return and exhaust ductwork
21. HVAC
 - a. Volume dampers
 - b. Fire and smoke partitions
 - c. Fire and smoke dampers
 - d. Smoke detectors
 - e. Automatic control dampers
 - f. Air quantities for each room
 - g. Air inlets/outlets
 - h. Rises and drops in ductwork
 - i. Expansion loops
 - j. Anchors
 - k. Valves

- l. Drip assemblies
- m. Balancing fittings
- 22. Interconnection of HVAC equipment with fire protection equipment (see fire protection)
- 23. Plan/section of mechanical equipment rooms
- 24. Schematic flow and riser diagrams⁷
- 25. Schematic control diagrams⁸
- 26. HVAC demolition drawings
- 27. Phasing plan
- 28. Equipment schedule
- 29. Seismic bracing
- 30. Symbols and abbreviation
- 31. Selection of:
 - a. Pumps
 - b. Fans
- 32. Sizing and selection of
 - a. Expansion tanks
 - b. Heat exchangers
- 33. Sound analysis
- 34. Complete selection data
- 35. Outside chilled water and condenser water distribution⁹
- 36. Standard detail drawings
- 37. Automatic temperature control drawings¹⁰
- 38. HVAC specifications

Submittal Footnotes:

¹ Provide specific design recommendations and full back-up data. Include the heating and cooling capacities of each functional area and the block cooling and heating loads for each new and/or existing building.

² The locations of these louvers must not allow short circuiting of air from emergency generator exhaust or truck waiting and loading dock areas into air intake etc. Consider factors affecting

