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ACCESS SERVICE

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20. OPTICAL NETWORKING(A) General

This section contains the rules and regulations pertaining to the provisioning of SONET Access and Dense Wave Division Multiplexing (DWDM) Service. The regulations and rates specified herein are in addition to the applicable rates and regulations specified in other Sections of this tariff.

This service supports asynchronous bandwidth capacities at 1.5 Mbps and 45 Mbps in addition to synchronous Optical Carrier (OC) bandwidth capacities at OC3, OC3c, OC12, OC12c, OC48, OC48c and OC192 bit rates and 1.25 Gbps or 2.5 Gbps wavelengths. The SONET add/drop multiplexer aggregates lesser bit speed services onto the dedicated SONET ring or the two-point SONET circuit configuration.

(B) Description

Optical Networking is comprised of high speed SONET based and/or DWDM technology providing connectivity at, and transport between, two or more customer designated locations (CDLs). Additionally, certain Optical Networking services provide interconnection between an EIS arrangement and a Telephone Company wire center associated with certain Optical Networking Service or advanced data service\*.

\* Advanced data services include Telephone Company provided frame relay services, switched multi-megabit services, Internet Protocol services, LAN Extension Services and ATM-cell relay services. Connections to advanced data services are provided by the Telephone Company where such connections are technically and operationally feasible, as determined by the Telephone Company.

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20. OPTICAL NETWORKING (Cont'd)(C) Conditions

Optical Networking services are provided where facilities are available with sufficient bandwidth capacity to meet the customer's request.

The customer is responsible for providing all facilities and cabling necessary to connect customer equipment to this interface.

Customer Facility Assignment (CFA) is controlled by the Telephone Company, on all non-interexchange access customer serving wire centers on the IOF and extends to the terminating CDL. Should the customer require control of the facility assignment and order multiplexing on the IOF, the services from the multiplexer to the end user serving wire center will be ordered from Section 7 of this tariff.

It is the customer's responsibility to ensure that the customer's equipment provides industry standard electrical signals compatible with Optical Networking transport transmission. Technical specifications are contained in the following Technical References:

GR-253-CORE, Issue 4  
GR-1400-CORE, Issue 3  
GR-1374-CORE, Issue 1  
ANSI T1.105.01-2000 (R2005)  
ANSI T1.102-1993 (R2005)

The Company will work cooperatively with the customer during a planning session to insure that the customer orders sufficient Optical Networking bandwidth capacity to satisfy the customer's requirements as well as other applicable Optical Networking services. This planning session must take place prior to an initial Optical Networking ASR.

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20. OPTICAL NETWORKING (Cont'd)(D) Application of Rates and Charges

The Connect rate element provides the platform for customer access to the Telephone Company's Optical Network. The Connect element provides the link between the CDL and the SWC of the CDL.

(1) There are two types of Connects:

Express Connect #

Flex Express Connect ##

(a) Reserved for Future Use

(b) Reserved for Future Use

(c) Reserved for Future Use

(d) Reserved for Future Use

(e) Reserved for Future Use

(f) Reserved for Future Use

(g) Reserved for Future Use

# Service availability limited. Refer to # footnote on Page 20-4.

## Service availability limited. Refer to # footnote on Page 20-5.

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20. OPTICAL NETWORKING (Cont'd)(D) Application of Rates and Charges (Cont'd)

## (1) (Cont'd)

## (h) Express Connect #

The Express Connect provides a connection to the Telephone Company's Optical Networking wire center(s) via a ring topology consisting of three nodes, one of which must be a Telephone Company wire center. When two of the nodes are customer designated locations, both must be served by the same serving wire center and only one customer location can be without an Express Connect CDL Node. The Express Connect is provided at a bandwidth of OC3, OC12 or OC48 and may be ordered under a one (1) year, three (3) year, five (5) year or seven (7) year Term Payment Plan (TPP).

The Express Connect has three rate elements, a "First System" with optional "Additional System(s) and Additional Express Nodes." The customer may order up to three "Additional Systems" of OC3, OC12 or OC48 bandwidth not to exceed OC12, OC48 or OC192 bandwidth capacity, respectively. Rider charges for Express Connect are included in its monthly rate.

The customer may subscribe to Custom Connect Shared Transport, Custom Connect Dedicated Transport or Banded Optical Transport with Express Connect.

The customer may also subscribe to Telephone Company provided banded SONET transport with Express Connect, provided that such connections are technically and operationally feasible, as determined by the Telephone Company.

- # Effective August 15, 2009, orders for new Express Connect First Systems, Additional CDL Nodes, and/or Additional CO Nodes are no longer permitted. The Telephone Company will continue to provide Express Connect pursuant to this Section 20 on any existing Express Connect that is in-service as of August 15, 2009, or any order for Express Connect that is placed with the Telephone Company prior to August 15, 2009, (collectively, Existing Express Connect). Changes in bandwidth capacity, moves, and/or rearrangements are not permitted.

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20. OPTICAL NETWORKING (Cont'd)(D) Application of Rates and Charges (Cont'd)

## (1) (Cont'd)

## (i) Flex Express Connect #

The Flex Express Connect provides a connection to the Telephone Company's Optical Networking wire center(s) via ring topology with a minimum of four nodes, two of which must be Telephone Company wire centers. When two or more of the nodes are customer designated locations, only one of those nodes may be without electronics. The Flex Express Connect is provided at a bandwidth of OC3, OC12 or OC48.

Flex Express Connect is comprised of four rate elements, a "First System" with optional "Additional System(s)", Additional Flex Nodes and Flex Express Transport. The customer may order up to three "Additional System(s) of OC3, OC12 or OC48 bandwidth not to exceed OC12, OC48 or OC192 bandwidth capacity, respectively.

Flex Express Transport is applied to the entire circumference of the service and is measured from the serving wire center of the customer designated location(s) and the CO Nodes. Flex Express Transport is ordered with the "First System" and each "Additional System" Flex Express Connect in OC3, OC12 or OC48 bandwidth not to exceed OC12, OC48 or OC192 bandwidth capacity, respectively.

Flex Express may be ordered under a one (1) year, three (3) year, five (5) year or seven (7) year Term Payment Plan (TPP). After the initial order for Flex Express Connect, month-to-month rates shall apply for the Additional Flex Nodes. When the TPP of the Flex Express "First System" expires and the customer does not renew the TPP as shown in 20.3(G)(2), the first Flex Express "Additional System" will assume the Flex Express "First System" rates.

- # Effective August 15, 2009, orders for new Flex Express Connect First Systems, Additional CDL Nodes, and/or Additional CO Nodes are no longer permitted. The Telephone Company will continue to provide Flex Express Connect pursuant to this Section 20 on any existing Flex Express Connect that is in-service as of August 15, 2009, or any order for Flex Express Connect that is placed with the Telephone Company prior to August 15, 2009, (collectively, Existing Flex Express Connect). Changes in bandwidth capacity, moves, and/or rearrangements are not permitted.

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20. OPTICAL NETWORKING (Cont'd)(D) Application of Rates and Charges (Cont'd)

## (1) (Cont'd)

## (i) Flex Express Connect # (Cont'd)

In addition to the Flex Express Connect rate elements, Custom Connect Transport (CC Transport), as described in 20(D)(1)(j), is applicable for transport from the serving wire centers of the customer designated locations and CO Nodes. Rider charges for Flex Express Connect are included in its monthly rate.

The customer may subscribe to Banded Optical Transport with Flex Express Connect.

The customer may also subscribe to Telephone Company provided banded SONET transport with Flex Express Connect, provided that such connections are technically and operationally feasible, as determined by the Telephone Company.

Rider charges are included in the monthly rate for Flex Express Connect.

# Service availability limited. Refer to # footnote on Page 20-5.

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20. OPTICAL NETWORKING (Cont'd)(D) Application of Rates and Charges (Cont'd)

## (2) Optical Network Transport

The transport element provides for the interoffice Optical Networking designated transport between wire centers on Telephone Company defined LANs. Each IC customer Connect must have its own transport. Transport cannot be shared among IC customer Connects.

Banded SONET Transport may be purchased in DS0, DS1, or DS3 Bandwidths.

(a) Reserved for Future Use

(b) Reserved for Future Use

(c) Reserved for Future Use

(d) Reserved for Future Use

(e) Reserved for Future Use

(f) Banded Optical Transport

Banded Optical Transport# provides transport between the serving wire center of the interexchange access customer's location and the access customer's end user premises. Banded Optical Transport may be provided at DS0, DS1, DS3, or STS1 bandwidth levels as required by the customer. When Banded Optical is ordered at a DS0 level, the customer must request a minimum of a DS1 interface at the IC customer wire center and will be charged the appropriate rider (i.e., DS1 or DS3). Banded Optical Transport is provided with a service guarantee as shown in Section 2.7.1.1. For subscription to Banded Optical Transport, the customer must have an accumulative demand requirement, whether provided pursuant to this Section 20 or as Telephone Company provided banded SONET transport, equivalent to an average of nine DS3s, i.e., 5,978 channels, per LATA, per state. The bandwidth will be reviewed annually at a mutually agreed upon date by the customer and the Company. An allowance of minus 2% will be considered as having met the commitment level. Should the bandwidth fall below minus 2%, the customer will have thirty (30) days to meet the bandwidth requirement. If not met, the customer will be notified by the Telephone Company and will be required to convert from Banded Optical Transport to another Optical Network Transport option.

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20. OPTICAL NETWORKING (Cont'd)(D) Application of Rates and Charges (Cont'd)

## (2) Optical Network Transport (Cont'd)

## (f) Banded Optical Transport (Cont'd)

Banded Optical Transport is provided at a flat-rated monthly charge for one (1) year, three (3) year, five (5) year, or seven (7) year contract periods. The contract period for Banded Optical Transport cannot exceed the contract period of the Connect. Banded Optical Transport includes the special access line from the end user serving wire center to the end user premises, for both on-net and off-net, with the exception of jointly provided Banded Optical Transport. Banded Optical Transport will be provisioned at the highest network facility available at the time of the order. The monthly rate will be determined based on the mileage between the serving wire centers of the customer designated locations and is applicable on a per circuit basis. Mileage will be rounded up to the next whole mile except when the CDLs are collocated.

When both customer designated locations are provided by the Telephone Company, wholly provided, the monthly rates as shown in 20(L)(37-46) are applicable. When one of the customer designated locations is provided by another telephone company, or the customer terminates at a multiplexer in a wire center on IOF, jointly provided, the monthly rates as shown in 20(L)(47-52) shall apply. For jointly provided transport with another telephone company, the meet point billing mileage calculation is specified in Section 2.7.3.

(E) Reserved for Future Use(F) Reserved for Future Use

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20. OPTICAL NETWORKING (Cont'd)(G) Rate Regulations

Optical Networking may be ordered under a one (1), three (3), five (5), or seven (7) year Term Payment Plan (TPP). Any TPP for these services is subject to a TPP Termination Liability Charge as specified herein.

When ordered together the TPP applies to Connects, Banded Optical Transport and Additional Nodes.

(1) Changes in Length of a TPP

Prior to the expiration of a TPP period, the customer may elect to convert to a new TPP period of the same or different length, subject to the following conditions:

- No credit will be given for the new period for payments made under the original TPP arrangement.
- NRCs will not be reapplied for existing services.
- If the new TPP period is shorter in length than the time remaining under the existing TPP, the change to the new TPP period constitutes a disconnect of the existing TPP service and termination liability charges will apply.
- The rates for the new period will be the rates currently in effect at the time of the change.
- If the customer subscribes to a new TPP which is greater in length than the initial TPP term and discontinues one or all of the service elements prior to the expiration of the new termination liability period, the termination liability, as set forth below, will apply based on the remainder of the TPP period in effect at the time of the disconnect.

<u>Year in which Service Is Discontinued</u>	<u>Liability Rate</u>
1	100%
2	75%
3	50%
4 or more	25%

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20. OPTICAL NETWORKING (Cont'd)(G) Rate Regulations(1) Renewal Options

Ninety (90) days prior to the expiration of the existing TPP, the customer shall submit in writing to select a new TPP or disconnect service. If no notice is received, the Company will automatically reconnect the customer to a new TPP with the same term life as the previous.

After completion of the initial TPP term and the customer subscribes to a new term that is longer in length the termination liability, as set forth below, will apply based on the remainder of the TPP period in effect at the time of the disconnect.

<u>Year in which Service Is Discontinued</u>	<u>Liability Rate</u>
1	20%
2	15%
3	10%
4 or more	5%

(3) Conversion

When an existing customer purchases Optical Networking, the customer may upgrade their existing special access services to Optical Networking. The upgrade may require physical network changes, as well as changes to existing billing arrangements. Physical changes consist of reterminating existing services not currently utilizing the Optical network.

Termination liability charges will not apply to the customer's existing services provided the Optical Networking TPP term commitment agreement is equal to or longer in length than the time remaining for the existing arrangement.

(4) Rate Changes

The TPP rates are exempt from Telephone Company initiated increases for the length of the plan, however, decreases will be passed on to the customer. Rate changes may occur as a result of FCC action.

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20. OPTICAL NETWORKING (Cont'd)(G) Rate Regulations (Cont'd)(5) Termination Liability

In the event the customer discontinues one or all of the service elements (Connect, Banded Optical Transport, Additional Node) prior to the end of the termination liability period, initial termination liability charges, as set forth below, will apply based on the remainder of the TPP period in effect at the time of the disconnect.

<u>Year in which Service Is Discontinued</u>	<u>Liability Rate</u>
1	40%
2	35%
3	30%
4 or more	25%

(6) Termination Without Liability

For Banded Optical Transport, termination charges will not apply when the customer disconnects a DS0 or DS1 on a circuit by circuit basis provided the required accumulative bandwidth is met as shown in 20(D)(2)(f).

(7) Upgrade to Higher Bandwidth

The Customer who has grown incrementally, may elect to upgrade service to a higher bandwidth during a TPP period to gain economic efficiencies. Termination charges will not apply as long as the upgraded service remains connected at the same point of termination(s), unless the network is being redesigned to gain network efficiency. Nonrecurring charges associated with the new bandwidth upgrade shall apply.

## (8) The Customer may elect to change service from a 2-fiber interface to a 4-fiber interface during a TPP. Termination charges will not apply as long as the changed service remains at the same point of termination(s).

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20. OPTICAL NETWORKING (Cont'd)(H) Off-Net Wire Center

Off-Net wire center is a wire center not a designated Optical Networking wire center office. The customer may order a DS0, DS1, DS3 or E1 to the Off-Net wire center. Mileage charges will be determined based on airline miles to the nearest on-net wire center at the transport rates shown in Section 5.

Circuits connected to the Off-Net wire center will be billed existing tariffed rates as shown in Section 5.

(I) Shared Use

Shared Use is the provisioning of Switched Access over Optical Networking. Rating as Optical Networking will continue until such time as a portion of the available Optical Networking capacity is used to provide Switched Access service.

For shared use, a special access DS3 interface must be ordered between the IC customer and the IC customer wire center. When switched trunks are ordered, a DS1 switched interface must be ordered for the switched trunks. A DS3 or DS1 interface ordered as Switched Access will be used exclusively for Switched Access.

As individual channels are activated for Switched Access, monthly charges will be adjusted between Switched Access and Optical Networking Access based on the number of channels used for Switched Access and the remaining Optical Networking Access facility.

The total Shared Use for Switched Access charge is equal to the number of channels used for Switched Access divided by 24 for DS1 or 672 for DS3 times the Monthly Switched Access Charges. The monthly Switched Access rates used will be the current rates for Switched Access Entrance Facility, Direct-Trunked Transport Facility, Direct-Trunked Transport Termination and Multiplexer.

(J) Reserved for Future Use(K) Reserved for Future Use

## ACCESS SERVICE

20. OPTICAL NETWORKING (Cont'd)(L) Rates and Charges(1) Reserved for Future Use(2) Reserved for Future Use(3) Reserved for Future Use(4) Reserved for Future Use(5) Reserved for Future Use(6) Reserved for Future Use(7) Reserved for Future Use(8) Express Connect # - First System

	<u>One Year Monthly Rate</u>	<u>Three Year Monthly Rate</u>	<u>Five Year Monthly Rate</u>	<u>Seven Year Monthly Rate</u>
OC3	\$ 7,700.00	\$ 6,800.00	\$ 6,300.00	\$ 6,200.00
OC12	13,000.00	12,100.00	11,400.00	11,300.00
OC48	27,625.00	27,125.00	26,750.00	26,350.00

Express Connect # - Additional System

	<u>One Year Monthly Rate</u>	<u>Three Year Monthly Rate</u>	<u>Five Year Monthly Rate</u>	<u>Seven Year Monthly Rate</u>
OC3	\$1,100.00	\$1,100.00	\$1,100.00	\$1,100.00
OC12	2,400.00	2,330.00	2,100.00	2,100.00
OC48	9,135.00	9,000.00	9,000.00	9,000.00

# Service availability limited. Refer to # footnote on Page 20-4.

## ACCESS SERVICE

20. OPTICAL NETWORKING (Cont'd)(L) Rates and Charges (Cont'd)(9) Flex Express Connect # - First System

	<u>One Year Monthly Rate</u>	<u>Three Year Monthly Rate</u>	<u>Five Year Monthly Rate</u>	<u>Seven Year Monthly Rate</u>
OC3	\$11,500.00	\$10,200.00	\$ 9,550.00	\$ 9,450.00
OC12	18,800.00	17,600.00	16,700.00	16,600.00
OC48	33,425.00	33,100.00	32,700.00	32,700.00

Flex Express Connect # - Additional System

	<u>One Year Monthly Rate</u>	<u>Three Year Monthly Rate</u>	<u>Five Year Monthly Rate</u>	<u>Seven Year Monthly Rate</u>
OC3	\$1,200.00	\$1,200.00	\$1,200.00	\$1,200.00
OC12	2,300.00	2,300.00	2,100.00	2,100.00
OC48	11,316.00	11,316.00	11,316.00	11,316.00

# Service availability limited. Refer to # footnote on Page 20-5.

## ACCESS SERVICE

20. OPTICAL NETWORKING (Cont'd)(L) Rates and Charges (Cont'd)(10) Express and Flex Express Connect # - Additional CDL NodeMonthly Rate

OC3	\$ 3,600.00
OC12	6,000.00
OC48	12,945.00

	<u>One Year Monthly Rate</u>	<u>Three Year Monthly Rate</u>	<u>Five Year Monthly Rate</u>	<u>Seven Year Monthly Rate</u>
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OC3	\$ 3,300.00	\$ 3,300.00	\$ 3,300.00	\$ 3,300.00
OC12	5,900.00	5,800.00	5,450.00	5,450.00
OC48	11,945.00	11,945.00	11,945.00	11,945.00

(11) Express and Flex Express Connect # - Additional CO NodeMonthly Rate

OC3	\$2,500.00
OC12	3,500.00
OC48	9,130.00

	<u>One Year Monthly Rate</u>	<u>Three Year Monthly Rate</u>	<u>Five Year Monthly Rate</u>	<u>Seven Year Monthly Rate</u>
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OC3	\$2,200.00	\$2,200.00	\$2,200.00	\$2,200.00
OC12	3,425.00	3,350.00	3,100.00	3,100.00
OC48	8,130.00	8,130.00	8,130.00	8,130.00

# Service availability limited. Refer to # footnotes on Pages 20-4 and 20-5.

## ACCESS SERVICE

20. OPTICAL NETWORKING (Cont'd)(L) Rates and Charges (Cont'd)(12) Flex Express # - First System TransportMonthly Rate

OC3	\$170.00
OC12	240.00

Flex Express # - Additional System TransportMonthly Rate

OC3	\$ 25.00
OC12	45.00

Express and Flex Express # - First System TransportMonthly Rate

OC48	\$500.00
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Express and Flex Express # - Additional System TransportMonthly Rate

OC48	\$100.00
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(13) Reserved for Future Use(14) Reserved for Future Use(15) Reserved for Future Use(16) Reserved for Future Use(17) Reserved for Future Use

# Service availability limited. Refer to # footnotes on Pages 20-4 and 20-5.

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20. OPTICAL NETWORKING (Cont'd)

(L) Rates and Charges (Cont'd)

- (18) Reserved for Future Use
- (19) Reserved for Future Use
- (20) Reserved for Future Use
- (21) Reserved for Future Use
- (22) Reserved for Future Use
- (23) Reserved for Future Use
- (24) Reserved for Future Use
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- (27) Reserved for Future Use
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- (29) Reserved for Future Use
- (30) Reserved for Future Use
- (31) Reserved for Future Use
- (32) Reserved for Future Use
- (33) Reserved for Future Use
- (34) Reserved for Future Use
- (35) Reserved for Future Use
- (36) Reserved for Future Use
- (37) Reserved for Future Use

## ACCESS SERVICE

20. OPTICAL NETWORKING (Cont'd)(L) Rates and Charges (Cont'd)(37) Transport - Banded Optical - DS0 (Wholly Provided)

	<u>One Year Monthly Rate</u>	<u>Three Year Monthly Rate</u>
0 miles	\$ 100.00	\$93.00
1 - 10 miles	102.00	95.00
11 - 20 miles	104.00	97.00
21 + miles	106.00	99.00

	<u>Five Year Monthly Rate</u>	<u>Seven Year Monthly Rate</u>
0 miles	\$ 90.00	\$87.00
1 - 10 miles	92.00	89.00
11 - 20 miles	94.00	91.00
21 + miles	96.00	93.00

(38) Transport - Banded Optical - DS1 (Wholly Provided)

	<u>One Year Monthly Rate</u>	<u>Three Year Monthly Rate</u>
0 miles	\$ 205.00	\$191.00
1 - 10 miles	285.00	268.00
11 - 20 miles	305.00	304.00
21 + miles	350.00	312.00

	<u>Five Year Monthly Rate</u>	<u>Seven Year Monthly Rate</u>
0 miles	\$ 185.00	\$173.00
1 - 10 miles	260.00	245.00
11 - 20 miles	295.00	258.00
21 + miles	300.00	281.00

## ACCESS SERVICE

20. OPTICAL NETWORKING (Cont'd)(L) Rates and Charges (Cont'd)(39) Transport - Banded Optical - DS3 (Wholly Provided)

	<u>One Year Monthly Rate</u>	<u>Three Year Monthly Rate</u>
0 miles	\$1,800.00	\$1,700.00
1 - 10 miles	2,600.00	2,550.00
11 - 20 miles	4,000.00	3,800.00
21 + miles	5,200.00	4,900.00

	<u>Five Year Monthly Rate</u>	<u>Seven Year Monthly Rate</u>
0 miles	\$1,600.00	\$1,500.00
1 - 10 miles	2,350.00	2,200.00
11 - 20 miles	3,500.00	3,200.00
21 + miles	4,600.00	4,300.00

(40) Reserved for Future Use(41) Reserved for Future Use(42) Reserved for Future Use(43) Reserved for Future Use(44) Transport - Banded Optical - STS1 (Wholly Provided)

	<u>One Year Monthly Rate</u>	<u>Three Year Monthly Rate</u>
0 miles	\$1,800.00	\$1,700.00
1 - 10 miles	2,600.00	2,550.00
11 - 20 miles	4,000.00	3,800.00
21 + miles	5,200.00	4,900.00

	<u>Five Year Monthly Rate</u>	<u>Seven Year Monthly Rate</u>
0 miles	\$ 1,600.00	\$1,500.00
1 - 10 miles	2,350.00	2,200.00
11 - 20 miles	3,500.00	3,200.00
21 + miles	4,600.00	4,300.00

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20. OPTICAL NETWORKING (Cont'd)(L) Rates and Charges (Cont'd)(45) Reserved for Future Use(46) Reserved for Future Use(47) Transport - Banded Optical - DS0 (Jointly Provided)

	<u>One Year Monthly Rate</u>	<u>Three Year Monthly Rate</u>
1 - 10 miles	\$ 9.50	\$ 8.50
11 - 20 miles	11.25	10.25
21 + miles	14.25	13.25

	<u>Five Year Monthly Rate</u>	<u>Seven Year Monthly Rate</u>
1 - 10 miles	\$ 8.25	\$ 8.00
11 - 20 miles	10.00	9.75
21 + miles	12.75	12.50

(48) Transport - Banded Optical - DS1 (Jointly Provided)

	<u>One Year Monthly Rate</u>	<u>Three Year Monthly Rate</u>
1 - 10 miles	\$ 78.00	\$ 72.50
11 - 20 miles	110.00	105.00
21 + miles	150.00	143.00

	<u>Five Year Monthly Rate</u>	<u>Seven Year Monthly Rate</u>
1 - 10 miles	\$ 68.00	\$ 64.00
11 - 20 miles	101.00	94.00
21 + miles	135.00	126.00

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20. OPTICAL NETWORKING (Cont'd)(L) Rates and Charges (Cont'd)(49) Transport - Banded Optical - DS3 (Jointly Provided)

	<u>One Year Monthly Rate</u>	<u>Three Year Monthly Rate</u>
1 - 10 miles	\$ 750.00	\$ 675.00
11 - 20 miles	2,200.00	2,025.00
21 + miles	3,700.00	3,400.00
	<u>Five Year Monthly Rate</u>	<u>Seven Year Monthly Rate</u>
1 - 10 miles	\$ 625.00	\$ 575.00
11 - 20 miles	1,920.00	1,815.00
21 + miles	3,100.00	2,900.00

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20. OPTICAL NETWORKING (Cont'd)

20.1 Reserved for Future Use

20.2 Reserved for Future Use

20.3 Reserved for Future Use

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20. OPTICAL NETWORKING (Cont'd)20.4 Dedicated SONET Entrance Facilities(A) General

Dedicated SONET Entrance Facilities (DSEF) provides high capacity DS3s with enhanced survivability between a Customer Designated Location (CDL) and the Serving Wire Center (SWC) of that CDL. DSEF is provisioned over the Telephone Company's shared SONET network that includes a self-healing ring that passes through the CDL, the SWC of that CDL, and another wire center as determined by the Telephone Company.

(B) DSEF Components

(1) DSEF consists of two basic service components:

- DSEF Terminations
- DSEF Interfaces

## (a) DSEF Terminations

DSEF Terminations provide STS1 bandwidth between the CDL and the SWC of that CDL. The DSEF Terminations carry DS3 services and are delivered with enhanced survivability over the Telephone Company's self-healing SONET network. As a result, the Customer is assured continuity of communication for the DS3 service even if there is a fiber facility failure between the CDL and the SWC of that CDL.

## (b) DSEF Interfaces

The DSEF Interface defines the engineering characteristics of the service hand-off at the CDL. The Customer must specify an electrical or optical interface for each DSEF Termination.

## (i) Electrical Interface

The electrical DSEF Interface defines the type of service that is to be provided over the Telephone Company provided SONET network. The electrical interface type that is available is DS3 (44.736 Mbps).

The electrical DSEF Interface is used for connecting a DS3 service to a DSEF Termination at the CDL.

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20. OPTICAL NETWORKING (Cont'd)

20.4 Dedicated SONET Entrance Facilities (Cont'd)

(B) DSEF Components (Cont'd)

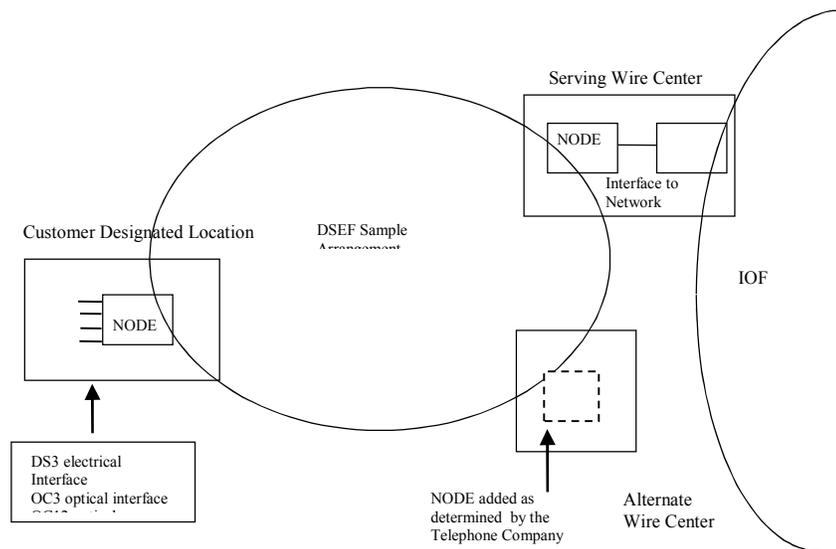
(1) (Cont'd)

(b) DSEF Interfaces (Cont'd)

(ii) Optical Interface

The optical DSEF Interface defines the optical handoff at the CDL. The optical interface is used for DS3 services connecting to DSEF Terminations and being mapped to an optical interface at OC3, OC12, or OC48 bandwidth. For example, Customer has the option of connecting multiple DS3 services to DSEF Terminations and mapping multiple DS3 services to a single OC3 optical interface.

(2) A network diagram of an DSEF with DS3 electrical interface and OC3 and OC12 optical interfaces is illustrated below:



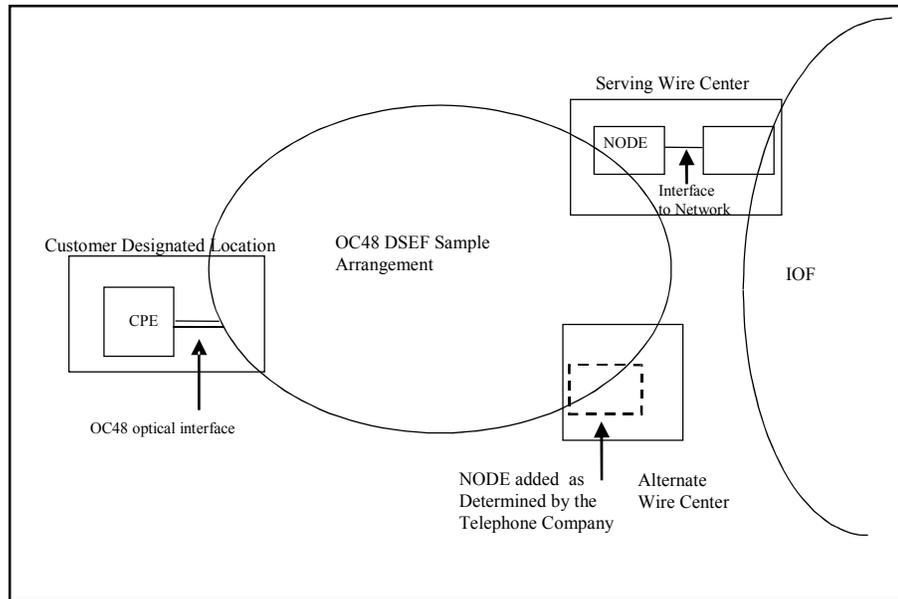
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20. OPTICAL NETWORKING (Cont'd)

20.4 Dedicated SONET Entrance Facilities (Cont'd)

(B) DSEF Components (Cont'd)

(2) A network diagram of an DSEF with an OC48 optical interfaces is illustrated below:



(C) Technical Specifications

Technical specifications for DSEF are set forth in Technical Reference GR-253-CORE, Issue 4.

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20. OPTICAL NETWORKING (Cont'd)20.4 Dedicated SONET Entrance Facilities (Cont'd)(D) Terms and Conditions

## (1) Deployment and Availability

- (a) DSEF is provided where SONET facilities and bandwidth are available to provide the requested DSEF Interface. The Telephone Company will work cooperatively with the Customer in determining the availability of such facilities and if service can be provided.
- (b) DSEF is available based on negotiated intervals, as described in Section 5.1.7 preceding.
- (c) Regulations for moves or rearrangements of DS3s are described in Section 7.2.1 preceding.

## (2) Service Limitations

If the CDL is located in the same building as the SWC, the diversity between the SWC and the CDL may be limited by the physical paths available to connect the SWC and the CDL, and there may not be fiber diversity routed through an alternate wire center.

## (3) Connection to Other Services

- (a) Connection of DS3 Services to DSEF Terminations is provided by the Telephone Company. Interoffice mileage, when applicable, will apply at Special Transport rates, as set forth in Section 7.11.5 preceding, for the appropriate DS3 service being transported over the interoffice facilities

Asynchronous multiplexing of DS1s into a DS3 occurs outside the DSEF and all terms and rates as set forth in Section 7.11 preceding are applicable for such multiplexing.

- (b) DSEF may also be connected to the following Telephone Company provided services, where such connections are technically and operationally feasible, as determined by the Telephone Company.

- ethernet private line service
- point-to-point SONET service

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20. OPTICAL NETWORKING (Cont'd)20.4 Dedicated SONET Entrance Facilities (Cont'd)(D) Terms and Conditions (Cont'd)

## (4) Space and Power

The Customer will be billed additional charges for any charges levied on the Telephone Company for space and power required to place equipment on the Telephone Company's side of the network interface.

## (5) Conversions

Customers who wish to convert existing DS1 and lower bandwidth special access services to a DSEF may do so without termination liability as long as the total capacity of converted services at the CDL does not decrease. A new commitment period commences with the conversion and no credit is given for time-in-service on the new term plan. Applicable nonrecurring charges for installations will apply.

(E) Application of Rates and Charges

## (1) Rate Structure

## (a) DSEF Terminations

Monthly recurring charges (MRCs) apply for DSEF Terminations. The MRCs are differentiated by the term plan and DSEF Interface selected by the Customer. Nonrecurring charges apply for installations of DSEF Terminations.

Additionally, the MRCs for DSEF Terminations apply on a tapered schedule basis as set forth in (F) following. The rate to be billed for each DSEF Termination is based on the total number of DSEF Terminations that are in-service as of each billing date, on a per CDL basis, and per Billing Account Number (BAN) basis. To determine the total number of DSEF Terminations, the Telephone Company will count all DSEF Terminations and Telephone Company provided SONET entrance facilities provided in connection with a Telephone Company provided point-to-point SONET service or ethernet private line service that terminate at such CDL that are in service and billed under the same BAN.

For example, a Customer purchases five (5) DSEFs that are in-service at three (3) different CDLs, with the 5 DSEFs being billed under two (2) different BANs.

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20. OPTICAL NETWORKING (Cont'd)20.4 Dedicated SONET Entrance Facilities (Cont'd)(E) Application of Rates and Charges (Cont'd)

## (1) Rate Structure (Cont'd)

## (a) DSEF Terminations (Cont'd)

- (i) The first CDL has two (2) DSEFs, one with fifteen (15) in-service STS1 DSEF Terminations and the other with 5 in-service STS1 DSEF Terminations for a total of twenty (20) STS1 DSEF Terminations. Both DSEFs are under the same BAN. The rate to be billed for each DSEF Termination in the 2 DSEFs at the first CDL is the rate shown for 20 STS1 DSEF Terminations, as set forth in (F) following.
- (ii) The second CDL has two (2) DSEFs, one with twenty (20) in-service STS1 DSEF Terminations and the other with twenty-two (22) in-service STS1 DSEF Terminations, for a total of forty-two (42) STS1 DSEF Terminations. The DSEFs at the second CDL are under separate BANs. The rate to be billed for each DSEF Termination in the first DSEF is the rate shown for 20 STS1 DSEF Terminations. The rate to be billed for each DSEF Termination in the second DSEF is the rate shown for 22 STS1 DSEF Terminations, as set forth in (F) following.
- (iii) The third CDL has one (1) DSEF with nine (9) in-service STS1 DSEF Terminations on the same BAN. The rate to be billed for each DSEF Termination on the DSEF is the rate shown for 9 STS1 DSEF Terminations, as set forth in (F) following.

## (b) DSEF Interfaces

MRCs for electrical DSEF Interfaces shall apply as set forth in (F)(2) following. When a customer orders an DSEF with a STS1 termination and an electrical interface, both the MRC for electrical DSEF interface (as set forth in (F)(2) following), and the MRC for STS1 Termination (as set forth in (F)(1) following) shall apply. The MRCs are differentiated by the term plan selected by the Customer. Nonrecurring charges apply for installations of electrical DSEF Interfaces, as set forth in (F)(3) following

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20. OPTICAL NETWORKING (Cont'd)20.4 Dedicated SONET Entrance Facilities (Cont'd)(E) Application of Rates and Charges (Cont'd)

## (2) Term Plans

DSEF is available for term plans of three (3) year and five (5) year commitment periods.

DSEF Services may be included in, and concurrently subscribed to, under the National Discount Plan as set forth in Section 22.1 following.

## (3) Connection to Other Services

When a Customer connects a DSEF Termination to a DS3 service under a one (1) year commitment period, the DSEF Termination and Interface will be provided under a three (3) year commitment period.

When a Customer connects a DSEF Termination to a DS3 service under a three (3) year or five (5) year commitment period, the DSEF Termination and Interface will be provided under the same length commitment period.

When a Customer connects a DSEF Termination to a DS3 service under a seven (7) year commitment period, the DSEF Termination and Interface will be provided under a five (5) year commitment period.

## (4) Expiration of Commitment Period

Upon expiration of the term plan, the Telephone Company will continue to provide DSEF on a month-to-month basis under the same rates, terms and conditions of the current term plan until the earliest to occur of: (a) the Customer cancels service or (b) a valid order for a new term plan is requested by the Customer.

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20. OPTICAL NETWORKING (Cont'd)20.4 Dedicated SONET Entrance Facilities (Cont'd)(E) Application of Rates and Charges (Cont'd)

## (5) Termination Liability

- (a) A Customer must fulfill the term plan for each DSEF Termination and Interface, or be subject to termination liability for each DSEF Termination and Interface that was not in service for the entire commitment period. If a Customer disconnects service during the first year, termination liability will be calculated at one hundred percent (100%) of the MRCs for the unexpired portion of the first year, and at fifteen percent (15%) for the remainder of the term. If the disconnection takes place after the first year, termination liability is calculated at 15% of the MRCs for the remainder of the term.
- (b) Termination liability will not apply to DSEF when:
  - (i) DSEF is canceled within thirty (30) days of the effective date of a Telephone Company initiated rate increase of eight percent (8%) or more on the Customer's MRCs (i.e., if the Customer's combined aggregate charge for the DSEF Terminations and Interfaces should increase by more than 8%).
  - (ii) a Customer changes its term plan to a longer commitment period and the CDL does not change.

## ACCESS SERVICE

20. OPTICAL NETWORKING (Cont'd)20.4 Dedicated SONET Entrance Facilities (Cont'd)(F) Rates and Charges

## (1) DSEF Terminations

(Jurisdiction: California and Texas)

(a) Per STS1/51.84 Mbps DSEF Termination  
With a DS3 Electrical Interface

	<u>Monthly Rate</u> <u>3 Year Term</u>	<u>Monthly Rate</u> <u>5 Year Term</u>
1	\$2,150.00	\$1,800.00
2	2,100.00	1,600.00
3	1,700.00	1,500.00
4	1,175.00	1,100.00
5	1,000.00	890.00
6	783.00	750.00
7	699.00	640.00
8	636.00	560.00
9	588.00	500.00
10	548.00	440.00
11	516.00	395.00
12	489.00	365.00
13	480.00	362.00
14	477.00	358.00
15	475.00	355.00
16	472.00	353.00
17	470.00	350.00
18	467.00	348.00
19	465.00	345.00
20	462.00	340.00
21	459.00	338.00
22	456.00	336.00
23	454.00	333.00
24	451.00	331.00

## ACCESS SERVICE

20. OPTICAL NETWORKING (Cont'd)20.4 Dedicated SONET Entrance Facilities (Cont'd)(F) Rates and Charges (Cont'd)

## (1) DSEF Terminations (Cont'd)

(Jurisdiction: California and Texas)

(a) Per STS1/51.84 Mbps DSEF Termination  
With a DS3 Electrical Interface (Cont'd)

	<u>Monthly Rate</u> <u>3 Year Term</u>	<u>Monthly Rate</u> <u>5 Year Term</u>
25	\$449.00	\$329.00
26	446.00	327.00
27	444.00	325.00
28	441.00	323.00
29	438.00	321.00
30	435.00	319.00
31	433.00	317.00
32	430.00	315.00
33	428.00	312.00
34	425.00	310.00
35	423.00	308.00
36	420.00	306.00
37	407.00	304.00
38	404.00	302.00
39	402.00	298.00
40	399.00	294.00
41	396.00	288.00
42	393.00	283.00
43	391.00	278.00
44	388.00	273.00
45	386.00	267.00
46	383.00	262.00
47	381.00	257.00
48 and up	378.00	252.00

## ACCESS SERVICE

20. OPTICAL NETWORKING (Cont'd)20.4 Dedicated SONET Entrance Facilities (Cont'd)(F) Rates and Charges (Cont'd)

## (1) DSEF Terminations (Cont'd)

(Jurisdiction: California and Texas)

(b) Per STS1/51.84 Mbps DSEF Termination  
With an OC3 Optical Interface

	<u>Monthly Rate</u> <u>3 Year Term</u>	<u>Monthly Rate</u> <u>5 Year Term</u>
1	\$2,310.00	\$1,905.00
2	2,260.00	1,705.00
3	1,860.00	1,605.00
4	1,335.00	1,205.00
5	1,175.00	855.00
6	971.00	690.00
7	891.00	633.00
8	831.00	590.00
9	785.00	557.00
10	747.00	530.00
11	717.00	508.00
12	691.00	490.00
13	683.00	488.00
14	680.00	486.00
15	678.00	484.00
16	675.00	482.00
17	673.00	480.00
18	670.00	478.00
19	668.00	476.00
20	665.00	474.00
21	663.00	472.00
22	660.00	470.00
23	658.00	468.00
24	655.00	466.00

## ACCESS SERVICE

20. OPTICAL NETWORKING (Cont'd)20.4 Dedicated SONET Entrance Facilities (Cont'd)(F) Rates and Charges (Cont'd)

## (1) DSEF Terminations (Cont'd)

(Jurisdiction: California and Texas)

(b) Per STS1/51.84 Mbps DSEF Termination  
With an OC3 Optical Interface (Cont'd)

	<u>Monthly Rate</u> <u>3 Year Term</u>	<u>Monthly Rate</u> <u>5 Year Term</u>
25	\$653.00	\$464.00
26	650.00	462.00
27	648.00	460.00
28	645.00	458.00
29	643.00	456.00
30	640.00	454.00
31	638.00	452.00
32	635.00	450.00
33	633.00	448.00
34	630.00	446.00
35	628.00	444.00
36	625.00	442.00
37	613.00	440.00
38	610.00	438.00
39	608.00	434.00
40	605.00	430.00
41	603.00	425.00
42	600.00	420.00
43	598.00	415.00
44	595.00	410.00
45	593.00	405.00
46	590.00	400.00
47	588.00	395.00
48 and up	585.00	390.00

## ACCESS SERVICE

20. OPTICAL NETWORKING (Cont'd)20.4 Dedicated SONET Entrance Facilities (Cont'd)(F) Rates and Charges (Cont'd)

## (1) DSEF Terminations (Cont'd)

(Jurisdiction: California and Texas)

(c) Per STS1/51.84 Mbps DSEF Termination  
With an OC12 Optical Interface

	<u>Monthly Rate</u> <u>3 Year Term</u>	<u>Monthly Rate</u> <u>5 Year Term</u>
1	\$2,310.00	\$1,905.00
2	2,260.00	1,705.00
3	1,860.00	1,605.00
4	1,335.00	1,205.00
5	1,175.00	970.00
6	896.00	855.00
7	816.00	745.00
8	756.00	665.00
9	710.00	605.00
10	672.00	545.00
11	642.00	500.00
12	616.00	470.00
13	608.00	465.00
14	605.00	455.00
15	603.00	450.00
16	600.00	445.00
17	598.00	440.00
18	595.00	435.00
19	593.00	430.00
20	590.00	424.00
21	588.00	422.00
22	585.00	420.00
23	583.00	418.00
24	580.00	416.00

## ACCESS SERVICE

20. OPTICAL NETWORKING (Cont'd)20.4 Dedicated SONET Entrance Facilities (Cont'd)(F) Rates and Charges (Cont'd)

## (1) DSEF Terminations (Cont'd)

(Jurisdiction: California and Texas)

(c) Per STS1/51.84 Mbps DSEF Termination  
With an OC12 Optical Interface (Cont'd)

	<u>Monthly Rate</u> <u>3 Year Term</u>	<u>Monthly Rate</u> <u>5 Year Term</u>
25	\$578.00	\$414.00
26	575.00	412.00
27	573.00	410.00
28	570.00	408.00
29	568.00	406.00
30	565.00	404.00
31	563.00	402.00
32	560.00	400.00
33	558.00	398.00
34	555.00	396.00
35	553.00	394.00
36	550.00	392.00
37	538.00	390.00
38	535.00	388.00
39	533.00	384.00
40	530.00	380.00
41	528.00	375.00
42	525.00	370.00
43	523.00	365.00
44	520.00	360.00
45	518.00	355.00
46	515.00	350.00
47	513.00	345.00
48 and up	510.00	340.00

## ACCESS SERVICE

20. OPTICAL NETWORKING (Cont'd)20.4 Dedicated SONET Entrance Facilities (Cont'd)(F) Rates and Charges (Cont'd)

## (1) DSEF Terminations (Cont'd)

(Jurisdiction: California and Texas)

(d) Per STS1/51.84 Mbps DSEF Termination  
With an OC48 Optical Interface

	<u>Monthly Rate</u> <u>3 Year Term</u>	<u>Monthly Rate</u> <u>5 Year Term</u>
1	\$6,288.00	\$4,488.00
2	3,144.00	2,244.00
3	2,096.00	1,496.00
4	1,572.00	1,122.00
5	1,258.00	898.00
6	1,048.00	748.00
7	898.00	641.00
8	786.00	561.00
9	699.00	499.00
10	629.00	449.00
11	572.00	408.00
12	524.00	343.33
13	517.00	342.41
14	515.00	340.58
15	513.00	338.74
16	510.00	337.82
17	509.00	335.99
18	506.00	334.15
19	505.00	333.23
20	502.00	331.40
21	500.00	329.56
22	498.00	327.73
23	496.00	326.81
24	493.00	324.97

## ACCESS SERVICE

20. OPTICAL NETWORKING (Cont'd)20.4 Dedicated SONET Entrance Facilities (Cont'd)(F) Rates and Charges (Cont'd)

## (1) DSEF Terminations (Cont'd)

(Jurisdiction: California and Texas)

(d) Per STS1/51.84 Mbps DSEF Termination  
With an OC48 Optical Interface (Cont'd)

	<u>Monthly Rate</u> <u>3 Year Term</u>	<u>Monthly Rate</u> <u>5 Year Term</u>
25	\$492.00	\$323.14
26	489.00	322.22
27	488.00	320.38
28	485.00	318.55
29	483.00	317.63
30	481.00	315.79
31	479.00	313.96
32	476.00	312.12
33	475.00	311.20
34	472.00	309.37
35	471.00	307.53
36	468.00	306.61
37	458.00	304.78
38	455.00	302.94
39	454.00	300.19
40	451.00	296.51
41	449.00	292.84
42	447.00	289.17
43	445.00	285.50
44	442.00	280.91
45	441.00	277.24
46	438.00	273.56
47	437.00	269.89
48 and up	434.00	265.30

## ACCESS SERVICE

20. OPTICAL NETWORKING (Cont'd)20.4 Dedicated SONET Entrance Facilities (Cont'd)(F) Rates and Charges (Cont'd)

## (2) Electrical DSEF Terminations

(a) DS3 Interface Monthly Recurring Charge

(Jurisdiction: California and Texas)

Per interface, per month	<u>3-Year Term</u> \$157.00
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Per interface, per month	<u>5-Year Term</u> \$105.00
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## (3) Installation Charges

(a) Per DSEF Termination

(Jurisdiction: California and Texas)

STS1 w/ separate Interface	<u>Nonrecurring Charge</u> \$1.00
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(b) Per electrical DSEF Interface

(Jurisdiction: California and Texas)

Per electrical DSEF Interface - DS3	<u>3-Year Term</u> <u>Nonrecurring Charge</u> \$1.00
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Per electrical DSEF Interface - DS3	<u>5-Year Term</u> <u>Nonrecurring Charge</u> \$1.00
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