

UNITED STATES DEPARTMENT OF AGRICULTURE  
Rural Electrification Administration

**BULLETIN 1755E-217**

**SUBJECT:** Postloan Engineering Services Contract -  
Telecommunications Systems (RUS Form 217)

**TO:** All Telecommunications Borrowers  
RUS Telecommunications Staff

**EFFECTIVE DATE:** March 20, 1997

**EXPIRATION DATE:** Date of change of 7 CFR part 1755.217, by  
rulemaking

**OFFICE OF PRIMARY INTEREST:** Telecommunications Engineering  
Committee

**FILING INSTRUCTIONS:** This bulletin replaces REA Form 217,  
Postloan Engineering Services Contract - Telephone Systems, dated  
7-81. File with 7 CFR 1755. This bulletin is available to the  
RUS staff on RUSNET and <http://www.usda.gov/rus/home/home.htm>.

**PURPOSE:** This bulletin provides a user-friendly reformatting of  
RUS Form 217, Postloan Engineering Services Contract -  
Telecommunications Systems, codified at 7 CFR §1755.217, as  
published on February 18, 1997, at 62 FR 7135. This bulletin  
presents the codified RUS Form 217 in a detachable, usable  
format.

Every effort has been made to ensure the accuracy of this  
document. However, in case of discrepancies, the regulation at  
7 CFR §1755.217 is the authorized source.

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Administrator

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Date

**TABLE OF CONTENTS**

1 General

2. Instructions for Use

Postloan Engineering Services Contract - Telecommunications  
Systems

**INDEX:**

Contract, Postloan Engineering Services, RUS Form 217

**ABBREVIATIONS and ACRONYMS**

CFR Code of Federal Regulations

RUS Rural Utilities Service

**1. General**

The Postloan Engineering Services Contract, RUS Form 217, contained in this bulletin is a detachable, usable reformatting of the Postloan Engineering Services Contract codified at 7 CFR §1755.217.

This contract provides the terms and conditions of the agreement to be executed between RUS telecommunications borrowers and consulting engineering firms hired to design and oversee construction of telecommunications facilities financed with RUS financing assistance. Several years have passed since this contract was last amended and changes in common contract language have occurred. These amendments allow contracts to be more consistent with common practice.

**2. Instructions for Use**

Remove the attached RUS Form 217 and use it in any situation where an engineering services contract is required for the construction of telecommunications facilities.

*Public reporting burden for this collection of information is estimated to average 7 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Department of Agriculture, Clearance Officer, OIRM, OMB Control # 0572-0059, AG Box 7630, Washington, DC 20250.*

*You are not required to respond to this collection of information unless this form displays the currently valid OMB control number.*

# POSTLOAN ENGINEERING SERVICES CONTRACT TELECOMMUNICATIONS SYSTEMS

## RUS Contract Form 217

### U.S. Department Of Agriculture Rural Utilities Service

Any company or organization choosing to generate or otherwise obtain and use electronic media reproductions of RUS Bulletin 1755E-217 (Form 217) should complete the following statement:

#### **REPRODUCTION STATEMENT**

\_\_\_\_\_ certifies that the attached electronically reproduced form is a true reproduction of RUS Bulletin 1755E-217 (Form 217), dated March 1997, from which it was derived and understands that in case of discrepancies the regulation at 7 CFR 1755 section 1755.217 is the authorized source.

**UNITED STATES DEPARTMENT OF AGRICULTURE**  
**Rural Utilities Service**

**POSTLOAN ENGINEERING SERVICES CONTRACT**  
**TELECOMMUNICATIONS SYSTEMS**

AGREEMENT made \_\_\_\_\_, \_\_\_\_\_, between  
\_\_\_\_\_  
\_\_\_\_\_ (hereinafter called the "Owner") and  
\_\_\_\_\_ (hereinafter called the "Engineer").

In consideration of the mutual undertakings herein contained, the parties hereto agree as follows:

**Section 1. Definitions.** For purposes of this Agreement the following definitions shall be used:

*Administrator.* The Administrator of RUS or personnel delegated authority to act for the Administrator.

*Borrower's Environmental Report.* An environmental study as described in 7 CFR 1794. For the purposes of this contract, this is the level of environmental review as described in 7 CFR 1794 required for the Project by RUS. In most cases of telecommunications construction, this will be a Borrower's Environmental Report.

*Contractor.* A provider of goods or services for the Project, other than the Engineer.

*Construction Administration.* The coordination of construction activities.

*Construction Drawings.* The drawings developed through the staking used to guide the construction of outside plant facilities.

*Cut Sheets.* The complete and sequential plans for Cutover.

*Cutover.* The orderly integration of new facilities with existing facilities.

*Description of Project.* The work and facilities listed by principal subdivisions in Table 1.

*Inspect.* To monitor and examine the work of the Contractor, compare the work to the contract, and note the details and quantities of construction on records and progress reports.

*Inspector.* A competent representative of the Engineer who inspects construction and reports compliance or noncompliance to the Resident.

*Loan Design.* Supplemental information which supports a loan application, as described in 7 CFR 1737.32.

*Marker.* A physical indicator at the construction site to guide the Contractor in construction of facilities.

*Project.* The telecommunications construction and procurements financed by a particular RUS loan.

*Resident.* The competent representative of the Engineer who is delegated full time "on site" Construction Administration responsibilities of the Engineer.

*Staking.* The determination of the approximate location of the facilities to be placed and creation of schematic drawings which show the facilities located with respect to the physical terrain.

*Work Sector.* A localized portion of the Project.

## **Section 2. General.**

**2.01 Financing of the Project.** All or part of the financing of the Project, including costs of materials, construction, installation, and engineering, shall be by a loan administered by RUS.

If the Project is financed in part by the Rural Telephone Bank, an agency of the United States of America, the references in this Agreement to "The United States of America" and the "Government" shall mean the "Rural Telephone Bank" as well, and the references to the "Administrator" shall mean the "Governor" of the Rural Telephone Bank as well. If the Project is financed wholly by the Rural Telephone Bank, the references to "The United States of America" and the "Government" shall mean the "Rural Telephone Bank" and the references to the "Administrator" shall mean the "Governor" of the Rural Telephone Bank.

**2.02. Compliance with Regulations.** The objective of this Agreement is for the Owner to obtain engineering assistance in completing a Project, while complying with RUS postloan construction regulations. The Engineer shall, therefore, perform all engineering services requested by the Owner hereunder, and render engineering advice and assistance, so as to enable the Owner to comply with 7 CFR Part 1753 and other applicable RUS regulations.

**2.03 General Obligation.** The Engineer shall, consistent with sound professional practices, diligently and competently render the engineering services required in this Agreement. These engineering services shall be reasonably necessary or advisable for the expeditious, economical, and sound design and construction of the Project listed in Table 1 by means of the services described in this agreement and its attachments. The Engineer shall also render other preparatory work as is necessary to place such portion of the Project in service, except where such duties are excluded from the terms of this Agreement. The enumeration of specific duties

and obligations to be performed by the Engineer and included herewith, shall not be construed to limit the foregoing general undertaking of the Engineer, with reference to such portion of the Project.

**2.04 Description of Project.** The Project shall consist of the subdivisions of the work and facilities listed by exchanges in Table 1 attached hereto.

### **Section 3. Miscellaneous.**

**3.01 Insurance.** The Engineer shall take out and maintain throughout the contract period the minimum insurance as required in Subpart C of 7 CFR part 1788 in effect at the date of this Agreement.

**3.02 Project Schedule.** The Engineer shall prepare in collaboration with the Owner, a work and progress report schedule to facilitate coordination of activities for Cutover of the Owner's Project. The Engineer shall report construction progress to the Owner monthly during all times when one or more contracts are open.

**3.03 Plans and Specifications.** Complete and detailed plans and specifications, drawings, maps and other engineering documents as required for the construction of the Project (all of the foregoing being herein sometimes collectively called the "plans and specifications"), shall be prepared by the Engineer, pursuant to the various attachments to this Agreement, and made a part hereof.

**3.04 Scope of Services.** The Engineer shall not be obligated to perform any services for the Project or any part thereof except to the extent that the Project as defined in Table 1, (or the parts thereof and the services related thereto) are delineated in (1) the attachments to this Agreement and (2) the plans and specifications approved by the Owner and the Administrator, as they may be amended from time to time, prepared pursuant to this Agreement.

**3.05 Standards.** All maps, drawings, plans, specifications, estimates, studies and other engineering documents required to be prepared or submitted by the Engineer under this Agreement shall conform to the applicable standard specifications and other forms prescribed by the Administrator and in effect at the date of this Agreement.

**3.06 Termination by Owner.** The Owner may at any time terminate this Agreement by giving notice to the Engineer, in writing, to that effect not less than thirty (30) days prior to the effective date of termination specified in this notice. Such notice shall be deemed given if delivered or mailed to the last known address of the Engineer. From and after the effective date specified in such notice this Agreement shall be terminated.

When termination is initiated by the owner, compensation for services hereunder shall be computed as far as possible in accordance with the provisions of the applicable attachment to this Agreement. To the extent that the provisions of any such attachment cannot be applied because construction is incomplete at the effective date of such termination, then the Engineer shall be

paid for engineering services in respect to such incomplete construction, a sum which shall bear the same ratio to the compensation which would have been payable under the provisions of any such attachment to this Agreement, if such construction had been completed. If requested by the Owner, the Engineer shall submit to the Owner in duplicate a certified statement of the Engineer's actual expenses in respect of such incomplete construction. All compensation invoiced by the Engineer and payable under this paragraph shall be due and payable thirty (30) days after the approval by the Owner and the Administrator of the amount due. In any case, compensation shall be due 30 days after the date Project documentation is delivered to the Owner under paragraph 3.08 of this Agreement.

**3.07 Termination by the Engineer.** The Engineer shall have the right, by giving to the Owner not less than thirty (30) days notice in writing, to terminate this Agreement if the Engineer shall have been prevented by conditions beyond the control and without the fault of the Engineer: (i) from commencing performance of this Agreement for a period of twelve (12) months from the date of this Agreement; or (ii) from proceeding with the completion of full performance of any remaining services, required of the Engineer pursuant to this Agreement, for a period of six (6) months from the date of last performance by the Engineer of other services required pursuant to this Agreement. From and after the effective date specified in such notice this Agreement shall be terminated, except that the Engineer shall be entitled to receive compensation for services performed hereunder, computed and payable in the same manner as set forth in paragraph 3.06.

**3.08 Project Documents.** Upon final payment by the Owner to the Engineer in accordance with the Statement of Engineering Fees, RUS Form 506, the following documents in final form become the property of the Owner and may be used by the Owner for Project operation and future development:

1. "Final record" system maps, in master form (electronic or original hard copy)
2. Cable schematics
3. Construction sheets
4. Cable assignment sheets
5. All contract documents including attached plans and specifications and final inventories.

All other documents and engineering records, including preliminary forms of the above documents, remain the property of the Engineer.

Upon termination of this Agreement the Engineer shall deliver to the Owner at a mutually agreeable place within 5 working days after the date of termination all Project documents (electronic or original hard copy) including records, map tracings, plans and specifications, test data, and field notes.

If requested by the Owner upon completion of the Project, the Engineer shall deliver to the Owner those documents which are the Owner's property, at a mutually agreed upon place and time.

**3.09 Employee's Qualifications.** The obligations and duties to be performed by the Engineer under this Agreement shall be performed by persons qualified to perform such duties efficiently. The Engineer, if the Owner shall so direct, shall promptly replace any Resident or other person employed by the Engineer in connection with the Project.

For information of the Owner and the Administrator, the Engineer shall file with the Owner statements signed by the Engineer of the qualifications, including resumes of specific experience, and the duties to be assigned to each Resident, Inspector and such other personnel assigned to the Project as may be requested by the Owner and Administrator.

The term Resident and Inspector, as used in this Agreement, shall mean a person properly trained and experienced to perform the services required under the terms of this Agreement, and does not mean that the person performing those duties must be a licensed or a registered professional engineer.

**3.10 License.** The Engineer shall comply with all applicable statutes pertaining to engineering and warrants that \_\_\_\_\_ (Fill in name of individual) who shall be in responsible charge of the Project possesses license number \_\_\_\_\_ issued by the State of \_\_\_\_\_ on the \_\_\_\_\_ day of \_\_\_\_\_.

**3.11 Payments of Engineer's Employees.** For each invoice the Engineer, if requested by the Owner, shall furnish to the Owner as a prior condition to payment, a certificate to the effect that all salaries or wages earned by the employees of the Engineer in connection with the Project have been fully paid by the Engineer up to and including a date not more than thirty (30) days prior to the date of such invoice. Before final payment under this Agreement the Engineer shall furnish to the Owner a certificate that all of the employees of the Engineer have been paid for services rendered by them in connection with the Project, and that all other obligations which might become a lien upon the Project have been paid.

**3.12 Engineer's Records.** The Owner and the Administrator shall have the right to inspect and audit all payrolls, records, and accounts of the Engineer relevant to the work performed for the purposes of this Agreement and the Engineer agrees to provide all reasonable facilities necessary for such inspection and audit.

**3.13 Compensation.** For the purpose of this Agreement, compensation for each type of work covered by the attachments and thereby made a part of this Agreement shall be as outlined in said attachments except where compensation is listed as being a "time and expense" basis, in which case the rates in Table 2 attached hereto (or as subsequently modified by approved amendments to this Agreement) shall apply.

**3.14 Taxes.** Any taxes or levies (excluding Federal, State, and local income taxes) which may be assessed against the Engineer for services performed or payments for services performed by the Engineer per this Agreement shall be in addition to the compensation set forth in the attachments to this Agreement. Such taxes or levies when paid by the Engineer shall be stated separately on all invoices and paid by the Owner.



**3.15 Interest.** Interest at the rate of \_\_\_\_\_ percent (\_\_\_\_\_% ) per annum shall be paid by the Owner to the Engineer on any unpaid balance due the Engineer, commencing thirty (30) days after the receipt of the Engineer's invoice, provided that the delay in payment beyond such time shall not have been caused by any conditions within the control of the Engineer. Such interest shall be paid ten (10) days after the amount of interest has been determined by the Engineer and the Owner. The start date of interest accrual is irrespective of the date of the Owner's approval of the invoice, but the interest computation shall be based on the invoice approved by the Owner.

**3.16 Non-Assignment.** The obligations of the Engineer under this Agreement shall not be assigned without the approval in writing of the Owner and the Administrator.

**3.17 Attachments.** The following listed attachments, when checked in appropriate boxes, are attached to and made a part of this contract, by this reference:

RUS Form 217a-Project Design, Assistance and Coordination;  
RUS Form 217b-Central Office Equipment Engineering Services;  
RUS Form 217c-Transmission Facilities Engineering Services;  
RUS Form 217d-Building Engineering Services;  
RUS Form 217e-Outside Plant Staking Services;  
RUS Form 217f-Outside Plant Contract Document Phase Engineering Services; and  
RUS Form 217g-Outside Plant Construction Phase Engineering Services.

**3.18 Service Addition.** When a service listed in paragraph 3.17 above is added to this contract after execution, an amendment to the Contract is required.

**3.19 Engineering Fee.** The Engineer shall provide an initial estimate, monthly updates and a final statement of engineering fees using RUS Form 506, Statement of Engineering Fees, or a facsimile thereof. Where a fixed amount or percentage is used in the attachments checked in section 3.17 above, the same fixed amount or percentage shall be used in the statement of engineering fees.

**3.20 Contract Amendment.** When the total engineering fee exceeds the initial contract estimate by 20% or more, an amendment to the contract shall be required as set forth in 7 CFR Part 1753.

**3.21 Compensation for Corrections.** No compensation shall be due or payable to the Engineer, pursuant to this Agreement, for any engineering services performed by the Engineer in connection with effecting of corrections to the design or construction of the Project, when such corrections are required as a direct result of failure by the Engineer to properly fulfill one or more of the Engineer's obligations as set forth in this Agreement.

**3.22 Force Majeure.** The Engineer shall not be held responsible for Project delays which are a result of Owner delays, Contractor delays or acts of God. The Engineer shall not be entitled to additional compensation unless the delays are the result of the Owner's negligence.

**3.23 Contract Beneficiaries.** Nothing under this Agreement shall be construed to give any rights or benefits in this Agreement to anyone other than the Owner, the Engineer and the Administrator, and all duties and responsibilities undertaken pursuant to this Agreement shall be for the sole and exclusive benefit of the Owner, Engineer and Administrator and not for the benefit of any other party. This paragraph does not relieve the Engineer of any obligation or responsibilities conferred upon licensed engineers under State law.

**3.24 Addenda.** Any addenda required for this contract should be placed before Table 1.

**3.25 Contract Completion and Closeout.** Upon completion of all services covered by this Contract, the Engineer shall execute the Statement of Engineering Fees, RUS Form 506, and submit copies to the Owner as prescribed under 7 CFR 1753 Subpart B.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be duly executed.

\_\_\_\_\_  
Owner

By \_\_\_\_\_  
President

ATTEST:

\_\_\_\_\_  
Secretary

\_\_\_\_\_  
Engineer

By \_\_\_\_\_  
President, Partner  
(Strike out inapplicable designation  
If partnership, all partners shall sign)

ATTEST:

\_\_\_\_\_  
Secretary

**TABLE 1**

---

*Description of Project*

(Attach supplemental sheets, as required)

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	EXCHANGE
MILEAGE OF OUTSIDE PLANT	_____
EQUIPMENT BUILDING <sup>1</sup>	_____
CENTRAL OFFICE EQUIPMENT <sup>1</sup>	_____
ASSOCIATED FACILITIES <sup>2</sup>	_____

OTHER<sup>3</sup>

EXCLUDED SERVICES<sup>2</sup> \_\_\_\_\_

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<sup>1</sup> Insert "new" or "additional" or "none" as appropriate.

<sup>2</sup> Insert "none" or list as appropriate.

<sup>3</sup> Describe

**TABLE 2**

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*Schedule of Time, Expense and Equipment Usage Rates, Dated \_\_\_\_\_*

---

1. Time Rates. Includes all costs associated with the employees except for those itemized in Paragraph 2, below.

Job Classification and Employee Name, if Known	Hourly Billing Rate
_____	_____
_____	_____
_____	_____
_____	_____

(Attached supplemental sheet, as required)

2. Expense Rates. These shall include subsistence expense, if any, paid to (or on behalf of) employees; plus reasonable employee transportation costs; plus the cost of printing (including mailing and transportation expenses), telephone, facsimile, and other materials and equipment related to the Project.

3. Test Equipment and Computer Usage Rates.

Description of Equipment	Hourly Billing Rate
_____	_____
_____	_____
_____	_____
_____	_____

(Attached supplemental sheet, as required)

4. Review of Rates. To the extent that the completion date of the Agreement, to which this Table 2 applies, shall extend 12 months beyond the date when this Agreement is originally executed; and on each subsequent anniversary of such Agreement this schedule of rates shall be verified or modified in writing by the Parties, to new rates mutually agreeable to the Parties to such Agreement, until Completion or Termination of such Agreement as provided therein.

5. Information for Owner. With each invoice for payment, the Engineer shall furnish the Owner information of the type outlined in a jointly approved format similar to that shown in Exhibit A.

6. Compensation Payment. Unless otherwise specified in this Agreement, compensation payable pursuant to Table 2 shall be due and payable ten (10) days after approval of the Owner of the service performed and the invoice of the Engineer, including the detail breakdown of the cost by the portion of the Project and section of the contract for which the service was performed. The Engineer shall be notified, within ten (10) days of receipt of invoices, of any discrepancies which require correction or addition as precedent for payment of such invoices by the Owner.

---

**EXHIBIT A**

Suggested Information and Format for Time & Expense Billing

Invoice period ending: \_\_\_\_\_

*Certificate of Time, Expense & Equipment Usage Charges*

Project Designation: \_\_\_\_\_

Postloan Engineering Contract,  
RUS Form 217 Dated: \_\_\_\_\_

Name: \_\_\_\_\_

Classification: \_\_\_\_\_

Date										
Service Performed*										
Hourly Rate										
Number of Hours										
Extended Costs										
Miles Driven										
Cost Per Mile										
Extended Costs										
Other Transportation										
Air Travel										
Other (Explain)										
Extended Costs										
Lodging										
Subsistence										

\* Service performed to be included by description of activity and by reference to paragraph number in RUS Form 217 Attachment.  
Example: Pre-Bid Conference: 217c 3 refers to conducting Pre-Bid Conference.

**EXHIBIT A - (Cont'd.)**

Date										
Computer										
Rate										
Hours										
Extended Costs										
<b>EQUIPMENT RENTAL</b>										
COE Test Equipment										
Hourly Rate										
Number of Hours										
Extended Costs										
O. P. Test Equipment										
Hourly Rate										
Number of Hours										
Extended Costs										
Transmission Testing										
Hourly Rate										
Number of Hours										
Extended Costs										
<b>OTHER EXPENSES</b>										
Telephone Charges										
Facsimile Charges										
Printing										
Construction Sheets										
Maps										

SUBMITTED (by Engineer): \_\_\_\_\_

APPROVED (by Owner): \_\_\_\_\_

\_\_\_\_\_ Title

\_\_\_\_\_ Date

\_\_\_\_\_ Title

\_\_\_\_\_ Date

Public reporting burden for this collection of information is estimated to average 30 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Agriculture, Clearance Officer, OIRM (OMB #0572-0059), AG Box 7630, Washington, DC 20250; Washington, DC 20503. OMB DOCKET NO. 0572-0056, Expires 09/30/97.

No further benefits may be paid out under this program unless this report is completed and filed as required by existing law and regulations (7 U.S.C. et seq.)

U.S. Department of Agriculture Rural Utilities Service  <b>STATEMENT OF ENGINEERING FEES                      TELECOMMUNICATIONS</b> INSTRUCTIONS - See 7 CFR Part 1753.17(f)	PROJECT DESIGNATION		
	CONTRACT NO.	DATE	
CONTRACT SECTION	ESTIMATED	INVOICED AND APPROVED	FINAL
Form 217a - Project Design, Assistance and Coordination			
A. Section 1. Project Design.....			
B. Section 2. Assistance to Owner.....			
C. Section 3. Coordination.....			
D. Section 4. Plant Records.....			
Form 217a Subtotal.....			
Form 217b - Central Office Equipment Engineering Services			
A. Section 1. Review of Requirements.....			
B. Section 2C. Rebidding.....			
C. Additions, Modifications, Relocations, or Removals.....			
D. Sections 2F, 2H and 2I and Section 3.....			
E. For each new Central Office Equipment contract or Force Account Proposal an amount equal to:			
_____ percent (____%) of first \$100,000 .....			
Plus _____ percent (____%) of next \$300,000 .....			
Plus _____ percent (____%) of the balance .....			
F. For each Installation Only contract: _____ percent (____%).....			
Form 217b Subtotal.....			
Form 217c - Transmission Facilities Engineering Services			
A. Section 1. Review of Requirements.....			
B. Additions, Modifications, Relocations, or Removals.....			
C. Section 3A. Rebidding.....			
D. Sections 3E, 3F and 3G.....			
E. Section 4. Tests.....			
F. For each new Transmission Facilities contract or Force Account Proposal an amount equal to:			
_____ percent (____%) of first \$50,000 .....			
Plus _____ percent (____%) of next \$150,000 .....			
Plus _____ percent (____%) of the balance .....			
G. For each Installation Only contract: _____ percent (____%).....			
Form 217c Subtotal.....			
Form 217d - Building Engineering Services			
A. Section 1. Review of Requirements.....			
B. Section 3B. Rebidding.....			
C. Additions, Modifications, Relocations, or Removals.....			
D. Sections 3F and 3G.....			
E. For each new Building contract or Force Account Proposal an amount equal to:			
_____ percent (____%) of first \$50,000 .....			
Plus _____ percent (____%) of the balance .....			
Form 217d Subtotal.....			
Form 217e - Outside Plant Staking Services			
A. Section 1. Review of Requirements.....			
B. Section 2C. Changes.....			
C. Section 2I. Joint Use or Joint Occupancy.....			
D. Replacement of Markers.....			
E. For Staking:			
1. _____ miles at \$ _____ per mile of existing buried plant to be modified.....			
2. Plus _____ miles at \$ _____ per mile of new buried plant.....			
3. Plus _____ miles at \$ _____ per mile of underground cable installed in ducts.....			
4. Plus _____ miles at \$ _____ per mile of new aerial plant.....			
5. Plus _____ miles at \$ _____ per mile of existing aerial plant to be modified.....			
6. Plus _____ miles at \$ _____ per mile of new joint use lines.....			
7. Plus _____ miles at \$ _____ per mile of existing lines to be removed where no construction or modification work is to be performed.....			
8. Plus _____ service entrances at \$ _____ per service entrance for each new or modified service entrance.....			
9. Plus _____ subscribers at \$ _____ per subscriber shown on construction sheets.....			
F. Section 2J. Time and Expense Staking.....			
Form 217e Subtotal.....			

RUS Form 506 (Rev 12-96)

*"You are not required to respond to this collection of information unless this form displays the currently valid OMB control number."*

CONTRACT SECTION	ESTIMATED	INVOICED AND APPROVED	FINAL
Form 217f - Outside Plant Contract Document Phase Engineering Services			
A. Sum of \$ _____ or _____ Sections at \$ _____ per section.....			
Plus _____ Amendments at \$ _____ per amendment.....			
Plus _____ miles at \$ _____ per mile of Project Line.....			
B. The Sum of \$ _____ for each approved Force Account Proposal.....			
C. Section 2. Map Tracings and Other Data.....			
D. Section 3. Schematics, Assignments, and Cut Sheets.....			
E. Section 4B6. Underground Conduit.....			
F. Section 4C3. Pre-Bid Conference and Rebidding.....			
G. Section 4D3. Changes to Force Account Proposals.....			
Form 217f Subtotal.....			
Form 217g - Outside Plant Construction Phase Engineering Services			
A. Section 1. Construction Phase			
1. Section 1B. Residents and Inspectors.....			
2. Section 1C. Pre-Construction Conference.....			
3. Section 1F. Joint Use or Joint Occupancy.....			
4. Section 1G. Tests.....			
5. Section 1H. Connecting Companies.....			
6. Section 1I. Reporting.....			
7. Section 1J. Final Inspection.....			
B. Section 2. Final Documents: the sum of \$ _____ or _____ Sections at \$ _____ per section.....			
Plus _____ miles at \$ _____ per mile of line included.....			
Plus _____ service entrances at \$ _____ for each service entrance installed, replaced or modified .....			
C. Section 3. Plant Records.....			
D. Section 4. Inventory and Appraisal.....			
Form 217g Subtotal.....			
Form 217 Contract SUBTOTAL.....			
TAXES.....			
GRAND TOTAL.....			

**CERTIFICATE OF ENGINEER**  
*(Complete for Final Statement Only)*

I, \_\_\_\_\_, certify that (1) I am the \_\_\_\_\_ of  
(Title)  
 \_\_\_\_\_, the Engineer in a contract entered into between the Engineer and the Owner,  
(Name of Engineer)  
 \_\_\_\_\_, for engineering services in a rural telecommunications Project, which Project  
(Name of Owner)  
 bears the Rural Utilities Service Project designation \_\_\_\_\_; and that (2)  
 this is a true and correct statement of the fees due under the terms of the engineering service contract; and that (3) all persons  
 employed by the Engineer in connection with the engineering on the Project have been paid in full.

\_\_\_\_\_  
(Signature)

**THIS STATEMENT AND CERTIFICATE IS HEREBY APPROVED**

\_\_\_\_\_  
(Owner)

By: \_\_\_\_\_

\_\_\_\_\_  
(Date)

**RECOMMENDED BY:**

**APPROVED BY:**

\_\_\_\_\_  
(Date)

\_\_\_\_\_  
(RUS General Field Representative)

\_\_\_\_\_  
(Date)

\_\_\_\_\_  
(Chief, \_\_\_\_\_ Area, Engineering Branch)



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## ATTACHMENT-RUS FORM 217a

### *Project Design, Assistance and Coordination*

#### **Section 1. Project Design.**

*A. Design.* The Project shall be constructed in accordance with the current Loan Design, Project Schedule (if developed), and Borrower's Environmental Report. Such Loan Design shall be based on the latest applicable criteria as specified by the Owner and the Administrator.

When necessary for the preparation of plans and specifications, the Engineer shall, upon request of the Owner and with the approval of the Administrator: (1) revise as necessary the Loan Design and Borrower's Environmental Report; (2) prepare or revise as necessary the outside plant design; (3) make measurements and analyses of existing traffic; (4) make tests of existing cable, including the determination of field locations for treatment of existing facilities associated with installation of carrier equipment; and (5) submit the resulting Loan Design and Borrower's Environmental Report to the Owner in a format suitable for approval by the Administrator.

*B. Change in Design.* If, after the approval of the Loan Design and Borrower's Environmental Report, or plans and specifications by the Owner and the Administrator, it shall be determined by the Owner that any change is required, the Engineer shall prepare such revisions in the Loan Design, Borrower's Environmental Report, and plans and specifications, or any part thereof, as is necessitated by the changes in requirements for service, design criteria, or other reasons arising during the performance of services for the Project.

**Section 2. Assistance To Owner.** The Engineer, to the extent requested by the Owner, shall assist in the Owner's obtaining agreements and authorizations required for the Project, including without limitation the furnishing of engineering information and drawings and participating in the Owner's obtaining:

- A.* Toll, EAS, operator assistance, special services and other connecting company commitments;
- B.* Joint use or joint occupancy agreements with other utilities;
- C.* Permits for crossing public roads, railroads, navigable streams or bodies of water;
- D.* Right-of-way authorizations, easements, and other permits necessary for encroachment on public or private lands;
- E.* Authorizations from regulatory bodies and franchises from public bodies; and
- F.* Environmental studies and clearances.

**Section 3. Coordination.** The Engineer, to the extent requested by the Owner, shall coordinate the work of others engaged in the Project, including work performed or supervised by the Owner, architect, and other engineers, to facilitate expeditious and economical completion of the Project. Services pursuant to this section shall be in addition to, and shall not include, services required by other provisions of this Agreement.

**Section 4. Plant Records.** The Owner shall furnish to the Engineer current and accurate plant records. If such records are not available the Owner may direct the Engineer to update existing records to current status. This may include conversion of existing records to a new medium.

**Section 5. Compensation.** The Owner shall pay the Engineer for services performed pursuant to this RUS Form 217a the "time and expense" compensation as defined in Table 2 of this Agreement.

**Section 6. Section Reference.** Unless otherwise specified or indicated, any reference to "section" shall mean within this attachment (RUS Form 217a - Project Design, Assistance and Coordination).

## ATTACHMENT-FORM 217b

### *Central Office Equipment Engineering Services*

**Section 1. Review of Requirements.** Prior to the preparation of plans and specifications, the Engineer shall review with the Owner the current and future requirements of the Project, in respect to central office equipment additions, replacements, modifications or complete new offices. The Engineer, to the extent requested by the Owner, shall prepare such studies as the Owner may require to support the selection by the Owner of the final design plan.

### **Section 2. Plans and Specifications and Contracts.**

*A. Preparation of Plans and Specifications.* Plans and specifications shall be prepared by the Engineer in accordance with standard RUS specifications and requirements for central office equipment, and shall be submitted to the Owner in a format suitable for approval by the Administrator.

*B. Bidders Qualifications.* The Engineer shall review with the Owner all Bidder qualifications and shall prepare and furnish to the qualified bidders the plans and specifications upon the conditions provided in the applicable standard RUS contract forms and in accordance with 7 CFR Part 1753.

*C. Bid or Proposal.* The Engineer shall be available to each prospective bidder for consultation with respect to the details of the plans and specifications and all other matters pertaining to the preparation of the proposals for the supply of equipment or services therefore. All changes to or clarifications of the plans and specifications provided to one prospective bidder shall be provided by the Engineer in writing to all other prospective bidders and to the Owner.

The Engineer shall attend and supervise all technical prebid review meetings and openings of quotes for the furnishing of equipment or services therefor. Where additions to existing equipment are proposed, a quote may be solicited from the original supplier or separate materials and installation contracts may be requested from several suppliers. The Engineer shall carefully check all quotes received and shall render to the Owner assistance in connection with the Owner's consideration of the quotes received so that contracts may be prudently and properly awarded.

The Engineer shall submit in writing to the Owner recommendations of first and second choice of bidders stating the reasons therefor, or, if the analysis of quotes indicates that no quote is satisfactory because of prices or other conditions, the Engineer shall recommend to the Owner that all quotes be rejected, giving reasons therefor. Unless otherwise directed by the Owner, the Engineer shall proceed in respect to rebidding in the manner provided for herein for the initial bidding.

*D. Award of Contract.* The Engineer shall prepare and furnish to the Owner three (3) copies of a detailed tabulation of all the bids or quotes and a tabulation showing the bidders' names and totals. The Owner shall submit to the Administrator the bidding information required

for approval of the award of the contract by the Administrator. Upon receipt of notice from the Owner of the Administrator's approval of the award of the contract, the Engineer shall prepare contracts in accordance with 7 CFR Part 1753.

*E. Contract Amendments.* If, after the equipment contract and the installation contract have been approved by the Owner and the Administrator, it shall be determined by the Owner that any change or changes in the plans and specifications are advisable, the Engineer shall prepare and submit a contract amendment in accordance with 7 CFR Part 1753.

*F. Customer Information and Engineering Meeting.* If necessary, the Engineer shall arrange, at a mutually agreeable time, a Customer Information and Engineering Meeting with the Owner, Contractor and Engineer to review the Contractor's proposal, equipment lists, software, data requirements, translation requirements, etc. prior to beginning of manufacture.

*G. Compliance.* The Engineer shall review all equipment lists, manufacturer's drawings, and other data submitted by the Contractor, to determine apparent compliance of such lists, drawings and other data with the approved contract. This shall not relieve the Contractor of its obligation to meet the performance specifications of the contract.

*H. Pre-Installation Meeting.* The Engineer shall arrange at a mutually agreeable time, a pre-installation meeting between the Contractor, Owner and Engineer, after the Contractor's installer has arrived at the contract site, to clarify areas of responsibility, check scheduling and to determine the Contractor's proposed compliance with the plans and specifications.

*I. Progress Reports.* A competent representative of the Engineer shall make periodic visits to the equipment installation site to inspect the progress and quality of the executed work and to determine, in general, if the work is proceeding in accordance with the contract. The Engineer shall report at least monthly to the Owner in writing stating the results of inspections. When the Engineer observes any failure of the executed work or work in progress to comply with the requirements of the contract, this shall be reported to the Owner immediately. These reports shall include suitable recommendations. If the engineer observes an unsafe practice, his only responsibility shall be to consult immediately with the Contractor and if his concerns are not satisfied, to notify the Owner immediately.

**Section 3. Tests.** The Engineer shall conduct, or cause to be conducted by the installer, such tests of all such equipment as required by the Owner and the Administrator to determine that the equipment meets the performance requirements of the plans and specifications. The Engineer shall make recommendations for the correction of performance or operational difficulties. All cases of performance or operational difficulties due to faulty installation or defective equipment shall be reported to the Contractor, for correction. When the corrections have been made, the Engineer shall retest the equipment. The Engineer shall furnish test equipment, when required, for all required tests or measurements performed by the Engineer.

The Owner and a representative of the Administrator will normally conduct a final inspection of completed construction. When requested by the Owner, a qualified representative of the Engineer shall be present.

**Section 4. Final Documents.** The Engineer shall prepare or cause to be prepared, and shall submit to the Owner for approval, in a format suitable for approval by the Administrator, complete and detailed final documents as specified in 7 CFR 1753 and a statement showing the total amounts due the Contractor, pursuant to the terms of the contract, including any amendments thereto. The final documents shall be submitted for the Owner's approval within forty (40) calendar days after the completion of construction based on the date on the certificate of completion covered by each central office equipment contract and each installation contract.

#### **Section 5. Compensation.**

*A. Time and Expense.* The Owner shall pay the Engineer "time and expense" compensation as outlined in the current Table 2 of this Agreement for: (1) all services performed pursuant to section 1; (2) "rebidding" pursuant to paragraph C of section 2; (3) all services in connection with additions to, replacement of components in, modifications of, or removal of, existing central office equipment; (4) all services pursuant to paragraphs F, H, and I of section 2; and (5) all services pursuant to section 3.

*B. Percent of Cost.* The Owner shall pay the Engineer for all other services performed pursuant to this RUS Form 217b, including final documents, for each central office equipment contract an amount equal to: \_\_\_\_\_ percent (\_\_\_\_\_ %) of the first one hundred thousand dollars (\$100,000); plus \_\_\_\_\_ percent (\_\_\_\_\_ %) of the next three hundred thousand dollars (\$300,000); plus \_\_\_\_\_ percent (\_\_\_\_\_ %) of the balance of the installed cost of such equipment for each complete new central office equipment contract, and for each installation contract an amount equal to \_\_\_\_\_% of such installation contract. Ninety percent (90%) of such sums shall be due and payable ten (10) days after approval by the Administrator of each contract (or force account proposal) and the balance of the compensation shall be due and payable ten (10) days after approval by the Owner and the Administrator of a certificate of completion of installation for each such equipment.

"Installed cost" shall mean the total cost of labor and materials of the central office equipment as shown on the final inventory documents prepared by the Engineer and approved by the Owner and the Administrator. For a materials only contract, "installed cost" shall mean the amount for materials shown on the final inventory documents.

**Section 6. Section Reference.** Unless otherwise specified or indicated, any reference to "section" shall mean within this attachment (RUS Form 217b - Central Office Equipment Engineering Services).

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## ATTACHMENT--RUS FORM 217c

### *Transmission Facilities Engineering Services*

**Section 1. Review of Requirements.** Prior to the preparation of plans and specifications for transmission facilities the Engineer shall review with the Owner the up-to-date requirements of the Project, as related to transmission facilities.

**Section 2. Plans and Specifications.** The Engineer shall prepare, and submit to the Owner in a format suitable for approval by the Administrator, the plans and specifications for the purchase and installation of such transmission facilities in sufficient time to allow normal scheduled delivery and installation of such to coordinate with the schedule of completion of the Project.

### **Section 3. Contracts.**

*A. Bid or Proposal.* The Engineer shall be available to each prospective bidder for consultation with respect to the details of the plans and specifications and all other matters pertaining to the preparation of the proposals for the supply of equipment or services therefor. All changes to or clarifications of the plans and specifications provided to one prospective bidder shall be provided by the engineer in writing to all other prospective bidders and to the Owner.

The Engineer shall attend and supervise all technical prebid review meetings and openings of quotes for the furnishing of equipment or services therefor. Where additions to existing equipment are proposed, a quote may be solicited from the original supplier or separate materials and installation contracts may be requested from several suppliers. The Engineer shall carefully check all quotes received and shall render to the Owner assistance in connection with the Owner's consideration of the quotes received so that contracts may be prudently and properly awarded.

The Engineer shall submit in writing to the Owner recommendations of first and second choice of bidders stating the reasons therefor, or, if the analysis of quotes indicates that no quote is satisfactory because of prices or other conditions, the Engineer shall recommend to the Owner that all quotes be rejected, giving the reasons therefor. Unless otherwise directed by the Owner, the Engineer shall proceed in respect to rebidding in the manner provided for herein for the initial bidding.

*B. Award of Contract.* Upon receipt of notice from the Owner of the Administrator's approval of the award of any contract, or bid proposal, the Engineer shall prepare and submit contracts in accordance with 7 CFR Part 1753.

*C. Contract Amendments.* If, after any such contract has been approved by the Owner and the Administrator, it shall be determined by the Owner that any change or changes in the plans and specifications are advisable, the Engineer shall prepare and submit a contract amendment in accordance with 7 CFR Part 1753.

*D. Compliance.* The Engineer shall review all equipment lists and manufacturer's drawings, and other data submitted by the Contractor, to determine apparent compliance of such lists, drawings and other data with the approved contract. This shall not relieve the Contractor of its obligation to meet the performance specifications of the contract.

*E. Pre-Installation Meeting.* The Engineer shall arrange, when requested by the Owner, at a mutually agreeable time, a pre-installation meeting between the Contractor, Owner and Engineer to clarify areas of responsibility, check delivery and completion scheduling and to assure that the Contractor comply with the plans and specifications.

*F. Customer Information and Engineering Meeting.* The Engineer shall arrange, if necessary, at a mutually agreeable time a customer information and engineering meeting with Owner, Contractor and Engineer to review the Contractor's proposal, equipment lists, software, data requirements, translation requirements, etc. prior to beginning of manufacture.

*G. Progress Reports.* A competent representative of the Engineer shall make periodic visits to the equipment installation site to inspect the progress and quality of the executed work and to determine, in general, if the work is proceeding in accordance with the contract. The Engineer shall report at least monthly to the Owner in writing stating the results of Inspections. When the Engineer observes any failure of the executed work or work in progress to comply with the requirements of the contract, this shall be reported to the Owner immediately. These reports shall include suitable recommendations. If the engineer observes an unsafe practice, his only responsibility shall be to consult immediately with the Contractor and if his concerns are not satisfied, to notify the Owner immediately.

**Section 4. Tests.** The Engineer shall conduct, or cause to be conducted, such tests as required by the Owner and the Administrator to determine that the equipment meets the performance requirements of the plans and specifications. The Engineer shall make recommendations for the correction of performance or operational difficulties. All cases of performance or operational difficulties due to faulty installation or defective equipment shall be reported to the Contractor for correction. When the corrections have been made, the Engineer shall retest the equipment. The Engineer shall furnish test equipment, when required, for all required tests or measurements performed by the Engineer.

The Owner and a representative of the Administrator will normally conduct a final inspection of completed construction. When requested by the Owner, a qualified representative of the Engineer shall be present.

**Section 5. Final Documents.** The Engineer shall prepare or cause to be prepared, and shall submit to the Owner for approval, in a format suitable for approval by the Administrator, complete and detailed final documents as specified in 7 CFR 1753 and a statement showing the total amounts due the Contractor, pursuant to the terms of the contract, including any amendments thereto. The final documents shall be submitted for the Owner's approval within forty (40) calendar days after the completion of construction based on the date on the certificate of completion covered by each transmission facilities contract and each installation contract.

## **Section 6. Compensation.**

*A. Time and Expense.* The Owner shall pay the Engineer "time and expense" compensation as defined in the current Table 2 of this Agreement for: (1) all services performed pursuant to section 1; (2) all services in connection with additions to, replacement or removal of components in, modifications of, relocation of existing systems of transmission facilities; (3) "rebidding" pursuant to paragraph A of section 3; (4) all services pursuant to paragraphs E, F, and G of section 3; and (5) all services pursuant to section 4.

*B. Percent of Cost.* The Owner shall pay the Engineer for all other services pursuant to this RUS Form 217c, including final documents, for each contract or force account proposal for new transmission facilities, an amount equal to: \_\_\_\_\_ percent (\_\_\_\_%) of the first fifty thousand dollars (\$50,000.00); plus \_\_\_\_\_ percent (\_\_\_\_%) of the next one hundred fifty thousand dollars (\$150,000.00); plus \_\_\_\_\_ percent (\_\_\_\_%) of the balance of the installed cost of each such document and for each installation contract an amount equal to \_\_\_\_\_% of such document. Ninety percent (90%) of such sums shall be due and payable ten (10) days after approval by the Owner of the document for the purchase or installation of such equipment. The balance of the compensation shall be due and payable ten (10) days after approval by the Owner and the Administrator of a certificate of completion of installation for such equipment.

"Installed cost" shall mean the total cost of labor and materials of the transmission facilities as shown on the final documents prepared by the Engineer and approved by the Owner and the Administrator. For a material's only contract, "installed cost" shall mean the amount for materials shown on the final inventory documents.

**Section 7. Section Reference.** Unless otherwise specified or indicated, any reference to "section" shall mean within this attachment (RUS Form 217c - Transmission Facilities Engineering Services).

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## ATTACHMENT--RUS FORM 217d

### *Building Engineering Services*

**Section 1. Review of Requirements.** Prior to the preparation of plans and specifications, the Engineer shall review with the Owner the current and future requirements for buildings to be constructed as a part of the Project.

**Section 2. Plans and Specifications.** The plans and specifications for the construction of buildings shall be prepared in sufficient time to allow normal completion of construction of the buildings at least thirty (30) days prior to delivery of central office equipment as specified in the central office equipment contract. The plans and specifications shall, unless otherwise directed by the Owner, be prepared in accordance with standard RUS specifications and construction drawings relating thereto. Additionally, the plans and specifications shall include such details as the characteristics of the building site(s) may require, including, without limitation, a plot plan and description of site development work, if any. The plans and specifications shall be submitted to the Owner in a format suitable for approval by the Administrator.

### **Section 3. Contracts.**

*A. Bidder's Qualifications.* After approval of the plans and specifications by the Owner and Administrator, notices shall be sent to prospective bidders in accordance with 7 CFR Part 1753. The names of those so notified shall be forwarded to the Owner at the time such notices are sent. The Engineer shall review with the Owner and the Owner shall approve the qualifications of all prospective bidders. The Engineer shall prepare and furnish to qualified contractors requesting them, the plans and specifications upon the conditions provided in the applicable standard RUS contract forms.

*B. Proposals.* The Engineer shall be available to each prospective bidder for consultation with respect to the details of the plans and specifications and all other matters pertaining to the preparation of the proposals for the construction of the building(s) or the supply of materials and equipment or services therefor. All changes to or clarifications of the plans and specifications provided to one prospective bidder shall be provided in writing to all other prospective bidders and to the Owner.

The Owner shall return unopened the bids received from bidders not specifically qualified to bid the plans and specifications.

The Engineer shall attend and supervise all openings of bids for the construction of the building(s) or for the furnishing of materials and equipment or services therefor. In the event that less than three (3) bids are received from qualified bidders, the bids shall remain unopened and the Engineer shall notify the Administrator thereof immediately. Unless otherwise directed by the Owner, the Engineer shall proceed, in respect of the rebidding, in the manner provided for herein for the initial bidding. The Engineer shall carefully check all bids received and shall render to the

Owner all such assistance as shall be required in connection with consideration of the bids received so that contracts may be prudently and properly awarded.

The Engineer shall submit in writing to the Owner recommendations of first, second and third choice of bidders, stating the reasons therefor, or if the analysis of bids indicates that no bid is satisfactory because of prices or other conditions, the engineer shall recommend to the Owner that all bids be rejected, giving the reasons therefor.

*C. Award of Contract.* The Engineer shall prepare and furnish to the Owner three (3) copies of a detailed tabulation of all the bids and a tabulation showing the bidders' names and totals of all bids. The Owner shall submit to the Administrator the bidding information required for approval of the award of the contract by the Administrator. Upon receipt of notice from the Owner of the Administrator's approval of the award of the contract, the Engineer shall prepare contracts in accordance with 7 CFR Part 1753.

*D. Contract Amendments.* If, after the contract has been approved by the Administrator it shall be determined by the Owner that any change or changes in the plans and specifications are advisable, the Engineer shall prepare and submit a contract amendment in accordance with 7 CFR Part 1753.

*E. Compliance.* The Engineer shall review all shop and manufacturer's drawings, construction detail variations, and other data submitted by the Contractor, to determine apparent compliance of such lists, drawings and other data with the approved contract. This shall not relieve the Contractor of its obligation to comply with the plans and specifications.

*F. Progress Reports.* A competent representative of the Engineer shall make periodic visits to the construction site to inspect the progress and quality of the executed work and to determine, in general, if the work is proceeding in accordance with the contract. The Engineer shall report at least monthly to the Owner in writing stating the results of inspections. When the Engineer observes any failure of the executed work or work in progress to comply with the requirements of the contract, this shall be reported to the Owner immediately. These reports shall include suitable recommendations. If the engineer observes an unsafe practice, his only responsibility shall be to consult immediately with the Contractor and if his concerns are not satisfied, to notify the Owner immediately.

*G. Final Inspection.* The Owner and a representative of the Administrator will normally conduct a final inspection of completed construction. When requested by the Owner, a qualified representative of the Engineer shall be present.

**Section 4. Final Documents.** The Engineer shall prepare, and shall submit to the Owner in a format suitable for approval by the Administrator, complete and detailed final documents as specified in 7 CFR 1753 and a statement showing the total amounts due the Contractor pursuant to the terms of the construction contract, including any approved amendments thereto. The final documents shall be submitted for the Owner's approval within sixty (60) calendar days after the

completion of construction based on the date shown on the certificate of completion covered by each contract.

### **Section 5. Compensation.**

*A. Time and Expense.* The Owner shall pay the Engineer "time and expense" compensation as defined in the current Table 2 of this Agreement for: (1) all services performed pursuant to section 1; (2) services performed for rebidding pursuant to paragraph B of section 3; (3) all services in connection with additions to or modifications of existing buildings; and (4) inspection of construction pursuant to paragraphs F and G of section 3;.

*B. Percent of Cost.* The Owner shall pay the Engineer for all other services performed pursuant to this RUS Form 217d, including final documents, for each new building contract included in the Project an amount equal to: \_\_\_\_\_ percent (\_\_\_\_%) of the first fifty thousand dollars (\$50,000.00); plus \_\_\_\_\_ percent (\_\_\_\_%) of the balance of the cost of construction thereof, of which sums ninety percent (90%) shall be due and payable ten (10) days after approval by the Administrator of a contract (or force account proposal) for the construction of the buildings; and the balance of the compensation shall be due and payable ten (10) days after approval by the Owner and the Administrator of a certificate of completion of construction for all such buildings included in the Project (or in a completed section of the Project).

"Cost of construction" shall mean the total cost of labor and materials (including Owner-furnished materials and labor) used in the construction of such buildings as shown on the final documents prepared by the Engineer and approved by the Owner and Administrator.

**Section 6. Section Reference.** Unless otherwise specified or indicated, any reference to "section" shall mean within this attachment (RUS Form 217d - Building Plans and Specifications and Contracts).

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## ATTACHMENT--RUS FORM 217e

### *Outside Plant Staking Services*

**Section 1. Review of Requirements.** Prior to the commencement of staking, the Engineer shall review with the Owner the current requirements of the Project with respect to outside plant and service entrance staking. At this review, decisions shall be reached concerning public and private rights-of-way, nominal width of construction corridors, and design status.

### **Section 2. Staking Requirements.**

#### *A. General.*

1. Staking for aerial plant shall include locating the proposed line and marking all new pole and other locations as necessary to construct the facilities.
2. Staking for buried plant shall include locating the proposed facilities indicating all pertinent construction information including details of the construction corridor.
3. Staking for underground plant shall include locating conduit systems, construction corridors, marking manhole sites and detailing all other pertinent information.
4. Staking for service entrances shall include locating protectors on the structure, the routing of aerial or buried entrances and the placement of markers, if required, to indicate construction information.

*B. Commencement.* The Engineer, with the approval of the Owner, shall determine when staking of the Project shall begin. The Engineer shall not commence staking in any area of the Project until the Owner has:

1. Either (a) stated in writing that right-of-way authorizations and easements reasonably required therefor have been procured, or (b) directed the Engineer in writing to perform right-of-way procurement under section 2, paragraph D, of RUS Form 217a - Project Design, Assistance, and Coordination;
2. Identified to the Engineer, by map locations, which line segments shall be staked on public right-of-way and which line segments shall be staked on privately owned right-of-way; and
3. Provided information to the Engineer pertaining to limitations on width of construction corridors for each such line segment.

The Owner shall review with the Engineer, and shall inform the Engineer, which specific lines are to be staked. The Owner shall furnish to the Engineer a current list of all existing and potential subscribers by map location and grade of service for whom service is to be furnished.

When requested by the Engineer, the Owner shall also furnish the telephone numbers of the existing subscribers. In determining when to proceed with staking, farming operations and other relevant conditions shall be taken into consideration so as to minimize the need for restaking. The Owner, when requested by the Engineer, shall furnish a qualified person to accompany each staking crew for the purpose of negotiating with landowners or tenants with respect to such right-of-way authorizations and easements, widths of construction corridors, and locations of proposed facilities.

*C. Changes.*

1. If, during the progress of staking by the Engineer, the Owner shall change the routing or location of a particular line segment, the Owner shall as early as practicable, notify the Engineer in writing of such changes. Upon such notice the Engineer shall duly note such change and instruct the staking crews accordingly. The same procedure shall be followed for changes made in type or quantity of facilities during the staking phase of the Project.
2. If during the process of staking, the Engineer determines that the routing of facilities along the right-of-way designated by the Owner would result in high costs of placement due to obstacles, inadequate construction corridors, or other circumstances, the Engineer shall notify the Owner and recommend alternative routing. If alternative routing is approved by the Owner and right-of-way can be obtained, the Engineer shall arrange to stake the facilities along the alternate route.

*D. Time of Staking.*

1. The Engineer shall proceed diligently with staking and continue therewith in such a manner that, prior to the release of plans and specifications to bidders, the staking of all outside plant facilities except service entrances shall be complete in order that the plans and specifications shall be complete and accurate.
2. If service entrances are included in the construction contract, staking of the service entrances shall be completed prior to beginning of construction in a Work Sector. If such staking is being performed by the Owner, the Engineer shall keep the Owner advised of the status of construction and the Owner shall do the staking in a timely manner.
3. The Engineer shall perform all restaking made necessary by changes discussed under paragraph C of section 2, above, as necessary to minimize delays in construction.

*E. Manner of Staking.* The staking shall be done in a thorough and workmanlike manner such that construction can be completed in accordance with the latest revision of the *National Electrical Safety Code, National Electric Code*, local and State laws, rules, regulations and orders of regulatory bodies having jurisdiction; and the Loan Design, Borrower's Environmental Report, and specifications approved by the Owner and the Administrator. The Engineer shall in

no case stake lines other than those shown in the approved Loan Design except for minor re-routing and minor changes dictated by field conditions, unless such change shall have been previously approved by the Owner and the Administrator. The Engineer shall replace all markers lost or removed prior to or during construction of the Project. All costs, including costs of markers, equipment, and other materials used in connection with the staking, shall be borne by the Engineer. All markers and existing poles shall be properly identified with corresponding listing on the construction sheets. Where it is probable that the Contractor or the Owner will have difficulty in locating markers, the Engineer shall provide some other suitable means to identify the location. When staking service entrances, the Engineer shall give due consideration to the location of the station protector (or network interface device if it incorporates a station protector) in relation to the availability of adequate grounding and the length of the service drop and station wiring.

*F. Construction Sheets.* The Engineer shall prepare or maintain construction sheets in such standard form as the Owner shall require (and as hereinafter described) to: serve as the means by which directions are given for the construction of the Project; serve as the permanent plant record by the Owner's facilities as built; and identify adequately the geographical location of the facilities, including non-standard construction corridors and cable placement locations. The Engineer shall enter thereon all pertinent and useful design, specifications and data governing the construction of the Project, including, without limitations:

1. Detailed instructions on the point of attachment of the Owner's facilities on existing pole lines employed in joint use with others;
2. Non-standard depths for installing buried and underground facilities;
3. The presence, but not location of, buried facilities of other utilities when known;
4. The presence of rock when known;
5. Vegetation clearing requirements; and
6. Surface type and surface features of terrain if appropriate.

Copies of construction sheets shall be made available for sale to all prospective bidders in advance of the pre-bid conference. For contract construction five counterparts of the construction sheets shall be supplied by the Engineer to the Contractor for construction use and two copies shall be supplied to the Owner. For force account construction three copies of the construction sheets shall be supplied to the Owner. When revisions in staking are necessary, the Engineer shall issue copies of the revised construction sheets.

*G. Resident.* A Resident, with full authority to act for the Engineer per this attachment, shall be maintained by the Engineer at the site of the Project at all times when staking or other services required under this attachment are being performed at the site of this Project. The Resident may also be engaged in staking as well as in supervising the staking activities of other staking crews of the Engineer. The Engineer shall establish and maintain, in the proximity of the

Project, a field office with telephone service at all times when staking or other services required under this RUS Form 217e are in progress.

*H. Reporting.* The Engineer shall prepare, execute, and submit to the Owner \_\_\_\_\_ (insert frequency of reporting - minimal monthly) all estimates, certificates, reports and other documents required to be executed by the Engineer pursuant to the loan contract.

*I. Joint Use or Joint Occupancy.* In connection with staking of joint use or joint occupancy facilities the Engineer shall:

1. Prepare and submit to the Owner for approval, detailed information on pole changes, additional poles, and other changes or additions required in existing facilities of other parties to joint use or joint occupancy agreements to accommodate the Owner's facilities; and
2. Coordinate engineering activities under direction of the Owner with other parties to joint use or joint occupancy agreements.

*J.* The Engineer with the approval of the Owner shall have the option of performing staking on the project under the circumstances described below on a time and expense basis consistent with Table 2 of this Agreement.

1. Less than 10 miles of buried or aerial plant,
2. Emergency restoral of service, or
3. Natural disasters.

**Section 3. Compensation.** The Owner shall pay the Engineer for services performed pursuant to this RUS Form 217e as follows:

*A. Staking Fee.* For all services in connection with the staking of the Project lines provided for in the approved Project design, including lines which, pursuant to the direction of the Owner, with the approval of the Administrator, shall not be constructed, and for all other services outlined in this RUS Form 217e (except as provided in paragraph C of section 3):

1. The sum of \_\_\_\_\_ dollars (\$\_\_\_\_\_) per mile of existing buried plant Project lines to be modified; plus
2. The sum of \_\_\_\_\_ dollars (\$\_\_\_\_\_) per mile of new buried plant Project lines; plus
3. The sum of \_\_\_\_\_ dollars (\$\_\_\_\_\_) per mile of underground cable to be installed in ducts; plus

4. The sum of \_\_\_\_\_ dollars (\$\_\_\_\_\_) per mile of new aerial Project lines; plus
5. The sum of \_\_\_\_\_ dollars (\$\_\_\_\_\_) per mile of existing aerial Project lines to be modified; plus
6. The sum of \_\_\_\_\_ dollars (\$\_\_\_\_\_) per mile of new joint use or joint occupancy Project lines; plus
7. The sum of \_\_\_\_\_ dollars (\$\_\_\_\_\_) per mile of existing Project lines to be removed where no construction or modification work is to be performed; plus
8. The sum of \_\_\_\_\_ dollars (\$\_\_\_\_\_) for each new service entrance staked and for which a construction sheet is prepared and each existing service drop to be modified as part of the Project; plus
9. The sum of \_\_\_\_\_ dollars (\$\_\_\_\_\_) for each subscriber shown on the construction sheets.

For purposes of this section "modified" means rearrangements, additions, change of pair assignments, etc., which require preparation of construction sheets to implement.

The length of the Project lines shall be determined by taking the sum of all distances between terminal points for underground cable and buried cable or conductor, and new service entrances added as part of the Project and all distances between pole markers or from center to center of poles carrying aerial conductor or cable, including joint use or joint occupancy poles, plus the vertical distances parallel to vertical cable runs for aerial cable installations.

*B. Time and Expenses.* The Owner shall pay the Engineer "time and expense" compensation as defined in the current Table 2 of this Agreement for all services performed in this RUS Form 217e in connection with: section 1; paragraph C of section 2; paragraph I of section 2; paragraph J of section 2; and for the replacement of markers made necessary by causes beyond the control of the Engineer.

*C. Payments.* Compensation under paragraph A of this section 3 shall be due and payable ten (10) days after delivery to the Owner, on a monthly basis, a copy of the construction sheets representing the staking completed during that month and a recapitulation of the mileage of the various types of line covered by such construction sheets and by previous construction sheets for which compensation has been requested.

The staking shall be subject to review and inspection by the Owner and the Administrator. The Engineer, when notified to do so by the Owner or the Administrator, shall correct such staking as the review and inspection may indicate to be necessary. Such review and payments shall not constitute unqualified approval of the staking. Where restaking is required for reasons within the control of the Engineer, no additional compensation shall be payable.

The compensation payable for lines actually constructed, shall be adjusted to the number of units actually constructed or actually completed as part of the construction of the Project, as reflected in the final documents. Compensation payable for lines which have been staked, but which shall not be constructed, shall be determined from the construction sheets as covered by line abandonment order.

*D. Plant Retained in Place.* Compensation under this section, for staking existing Project lines on which modification work is to be performed, shall include compensation for the designation of assembly units of existing plant to be retained in place, and shown on the construction sheets.

**Section 4. Section Reference.** Unless otherwise specified or indicated, any reference to "section" shall mean within this attachment (RUS Form 217e - Outside Plant Staking Services).

## **ATTACHMENT--RUS FORM 217f**

### *Outside Plant Contract Document Phase Engineering Services*

**Section 1. Review of Requirements.** The Engineer shall use the Loan Design and other information furnished by the Owner under this Agreement as the basis for the preparation of the plans and specifications. Prior to the beginning of the preparation of the plans and specifications, the Engineer shall review with the Owner all data furnished to determine the most recent requirements for facilities to be included in the plans and specifications.

**Section 2. Map Tracings and Other Data.** Prior to and during the preparation of the plans and specifications by the Engineer, the Owner, if it has not previously done so by other provisions of this Agreement, shall furnish any of the following items needed by the Engineer:

A. Up-to-date tracings of the detail and town maps of the area of the proposed system on which the Loan Design was based and which show the existing system, and a tracing of the key map when a key map is required by the Owner;

B. Up-to-date cable schematics (cable plant layout), and construction sheets showing the existing system construction;

C. Up-to-date line and station data on existing subscribers;

D. The Loan Design and Borrower's Environmental Report on which the loan was based;

E. Current information as to the location and extent of electric and other lines available for joint use, together with conformed copies of all existing joint use or joint occupancy agreements covering such lines;

F. Current listing of existing, signed, and potential subscribers by map location and grade of service to be considered in the preparation of the plans and specifications. The list of existing subscribers shall be properly referenced to the line and station data;

G. Detailed lists of materials on hand, or on order, which are to be furnished by the Owner in the construction of the Project, together with the quantity and value of each item of such materials; and

H. A written statement setting forth the scope of plans and specifications and the sequence in which the construction shall be performed and whether service entrances are to be included in the plans and specifications.

The map tracings, schematics, and construction sheets are to be of suitable material capable of allowing corrections to be made of the information shown thereon and capable of being reproduced.

### **Section 3. Schematics, Assignments, and Cut Sheets.**

*A. Cable Schematics.* The Engineer shall prepare cable schematics in such form as the Owner shall require to: (a) serve as a means by which directions are given for connecting feeder cable and distribution cable pairs, cross-connection terminals, connecting load coils, and such other directions as may be necessary for properly splicing the feeder cables, distribution cables and other facilities being installed; (b) serve as the permanent circuit assignment record of the Owner's cable and wire facilities; and (c) adequately identify the physical location of all equipment, devices and connections other than services, associated with the pairs of such feeder cable and distribution cable facilities.

*B. Circuit and Number Assignments.* If requested by the Owner, the Engineer shall prepare telephone number assignments and shall identify the circuit to which the service is to be connected for station installations, including without limitation such information with respect to central office equipment connections as may be required.

*C. Cut Sheets.* Where modification of existing lines is to be performed, the Engineer shall furnish in such form as the Owner shall require complete and detailed information, collectively known as "Cut Sheets" for: (a) making such changes in circuit connections in the existing outside plant as may be required, including without limitation all associated devices such as load coils, terminals, and temporary connections; (b) making such changes in telephone number assignments and service connections as may be required, including without limitations, the corresponding connection changes required at the central office end; and (c) designating the sequence to be followed in making such changes.

### **Section 4. Outside Plant Plans and Specifications and Contracts.**

*A. Plans and Specifications.* The Engineer shall, to the extent not previously prepared under other provisions of this Agreement, prepare and review with the Owner complete and detailed plans and specifications, drawings, maps and other documents required for the construction of the outside plant facilities to be included as a part of the Project. During the preparation of the plans and specifications, the Engineer shall make such changes in the plans and specifications as may be reasonably required by the Owner as a condition of approval by the Owner and Administrator.

*B. Content of Plans and Specifications.* The plans and specifications for outside plant shall be prepared in sufficient time to allow normal completion of construction of the outside plant to coincide with the established service dates and shall include the following:

1. One copy of the key map of the system, when a tracing is furnished by the Owner.
2. One copy (or more if necessary for clarity) of the central office area detail maps (sometimes referred to as exchange detail maps) and town maps of the system, on which there shall be indicated the following:



- a. Location of lines to be constructed, indicating joint use or joint occupancy lines;
  - b. Location of switching centers and pair-gain devices;
  - c. Location of existing lines included as part of the proposed system and modification of such lines;
  - d. Location of existing lines to be retired;
  - e. Locations other than service entrances, where right-of-way has not been obtained;
  - f. Work Sectors indicating sequence of construction;
3. Complete drawings of each type of non-standard RUS unit covering the construction and the materials to be used.
  4. An estimate of quantities of the various units of construction.
  5. A complete cable plant layout and cable schematics, when applicable, for each central office area as prepared pursuant to paragraph A of section 3.
  6. If the Project contains requirements for installation of underground conduit, manholes and associated appurtenances, the Engineer, during the preparation of the plans and specifications, shall secure field data necessary for the proper design of such facilities (including plan and profile data, if required, and detail construction drawings, including cable to be installed), and shall proceed with the preparation of detailed plans and specifications for the construction of such facilities. Such drawings and specifications, when completed, shall be added to, and made a part of, the construction plans and specifications.
  7. An itemized list of materials on hand or on order to be furnished by the Owner, showing the locations of delivery points and delivery schedules of such materials, the quantity, unit price and extended price.
  8. The form of the contract to be entered into between a Contractor and the Owner for the construction of the outside plant, including forms of notice and instructions to bidders, Contractor's proposal, materials and construction specifications, Contractor's bond, description of assembly units and construction drawings.

*Note:* Plans and specifications for outside plant facilities to be constructed under a force account proposal do not require Items 7 and 8, above.

*C. Contracts.*

1. Upon receipt of notice by the Engineer from the Owner of the Administrator's approval of the plans and specifications, the Engineer shall, unless otherwise instructed by the Owner, with the approval of the Administrator, proceed to take all usual and customary actions, including compliance with the procedures set forth herein and in 7 CFR Part 1753, to facilitate full, free, and competitive bidding for the award of contracts.
2. Notices to Bidders shall be sent in accordance with Subpart F of 7 CFR Part 1753. The Engineer shall then review with the Owner and the Owner shall approve the qualifications of bidders who replied to the notice, as a condition of release of bid documents to any such bidder. The Engineer shall prepare and furnish to such qualified bidders the appropriate bid documents including construction sheets, and the plans and specifications upon the conditions provided in the applicable standard RUS contract forms. The construction sheets shall be furnished upon payment of reasonable charges. The Engineer shall also prepare and furnish, upon payment of reasonable charges, to material suppliers requesting them, copies of the Contractor's proposal sheets for outside plant together with any special drawings or material specifications pertaining thereto and a list of materials to be furnished by the Owner.
3. The Engineer shall conduct a Pre-Bid Conference in accordance with Subpart F of 7 CFR Part 1753 and shall be available to each prospective bidder for consultation with respect to the details of the plans and specifications and all other matters pertaining to the preparation of the proposals for the construction, or the supply of materials and equipment or services therefor. All changes to or clarifications of the plans and specifications provided to one prospective bidder shall be provided in writing to all other prospective bidders and to the Owner.
4. The Engineer shall attend and supervise all openings of bids for the construction, or for the furnishing of materials and equipment or services therefor. The Owner shall return unopened bids received from Bidders not previously qualified under paragraph C2 of this section. In the event that bids are received from less than three (3) qualified bidders, the bids shall remain unopened and the Owner shall notify the Administrator thereof immediately. If directed by the Owner, the Engineer shall proceed in respect of the rebidding, in the manner provided for herein for the initial bidding. The Engineer shall check the assembly unit prices and summarize of all bids received. The Engineer shall render to the Owner assistance in connection with the Owner's consideration of the bids received so that contracts may be prudently and properly awarded. The Engineer shall submit to the Owner a written recommendation for award of the contract or rejection of all bids stating the reasons therefor.
5. The Engineer shall prepare and furnish to the Owner three (3) copies of the detailed proposal sheets or a detailed tabulation of the low bid, and a tabulation showing the

names and totals of all bids. The Owner shall submit to the Administrator the bidding information for approval by the Administrator of the award of the contract. Upon receipt of notice from the Owner of the Administrator's approval of the award of the contract, the Engineer shall prepare three (3) counterparts of the construction contract to be executed by the Owner and the successful bidder and the Owner shall forward such executed counterparts to the Administrator for approval.

6. If, after the construction contract has been approved by the Owner and the Administrator, it shall be determined by the Owner that any changes in the plans and specifications are advisable, the Engineer shall prepare and submit a contract amendment in accordance with 7 CFR Part 1753.

*D. Force Account.*

1. If all or a portion of the Project, shall be constructed by force account, the Engineer shall prepare a force account proposal in accordance with Subpart G of 7 CFR Part 1753.
  - a. When requested by the Owner, the Engineer shall prepare an itemized list of the total quantities of all items of materials required for the construction showing in addition the quantity of each item of materials the Owner has on hand based on the list furnished by the Owner pursuant to paragraph G of section 2.
  - b. The force account proposal shall include an estimate, prepared in collaboration with the Owner, of the unit construction costs in substantially the same form as the Contractor's proposal in the standard contract form, and a summary of the total estimated cost of construction, setting forth the following:
    - (1) The total Cost of labor and other;
    - (2) The total Cost of materials; and
    - (3) The number of calendar days required for the construction.
2. After receipt of notice by the Engineer from the Owner of approval by the Administrator of the force account proposal, the Engineer, in collaboration with the Owner, shall fix a date for the commencement of construction. In the determination of this date, consideration shall be given to the status of material deliveries, staking, easements, and the availability of competent construction personnel and adequate equipment to facilitate continuous construction in an efficient and expeditious manner. Such date as agreed upon shall be submitted to the Administrator by the Owner and the date thus established shall be the "Commencement Date" for the construction. The Engineer shall be available to the Owner for consultation with respect to the

details of the plans and specifications and all other matters pertaining to the construction of the Project.

3. If, after the force account proposal has been approved by the Owner and the Administrator, it shall be determined by the Owner that any change or changes in the force account proposal are advisable, the Engineer shall prepare and submit to the Owner all necessary details in connection with the change or changes, and upon approval thereof by the Owner, the proposed change or changes shall be submitted by the Owner to the Administrator. To the extent that the Administrator approves such proposed change or changes they shall be included as part of the force account proposal, and the Engineer shall immediately proceed in respect of any additional staking, construction, and material contracts or amendments required thereby in like manner as though such staking, construction, and material contracts or amendments were originally included as part of the force account proposal.

### **Section 5. Compensation.**

A. The Owner shall pay the Engineer for services performed pursuant to this RUS Form 217f (except as provided in paragraph B of this section) as follows:

1. The sum of \_\_\_\_\_ dollars (\$\_\_\_\_\_) or when the outside plant is divided into sections for construction purposes requiring separate plans and specifications for each section; a sum of \_\_\_\_\_ dollars (\$\_\_\_\_\_) for each such section for which complete plans and specifications are prepared; plus,
2. The sum of \_\_\_\_\_ dollars (\$\_\_\_\_\_) for each approved amendment to the contract; plus
3. The sum of \_\_\_\_\_ dollars (\$\_\_\_\_\_) per mile for each mile of Project line facilities (1) included in the plans and specifications, and (2) added or deleted by approved amendments to the plans and specifications; plus
4. The sum of \_\_\_\_\_ dollars (\$\_\_\_\_\_) for each approved force account proposal.

The compensation payable under paragraph A of this section shall be due and payable ten (10) days after the approval of the plans and specifications or approved amendments by the Owner and the Administrator.

B. The Owner shall pay the Engineer "time and expense" compensation as defined in the current Table 2 of this Agreement for services: (1) as requested by the Owner, in connection with corrections to, or the furnishing of, items required to be furnished by the Owner per section 2; (2) required under section 3; (3) in connection with underground conduits, paragraph B6 of section 4;

(4) for changes in force account plans and specifications, paragraph D3 of section 4; and (5) in connection with the conducting of the Pre-Bid Conference, paragraph C3 of section 4, and for rebidding, paragraph C4 of section 4.

**Section 6. Section Reference.** Unless otherwise specified or indicated, any reference to "section" shall mean within this attachment (RUS Form 217f - Outside Plant Plans and Specifications and Contracts).

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## ATTACHMENT--RUS FORM 217g

### *Outside Plant Construction Phase Engineering Services*

#### **Section 1. Construction Phase.**

A. *General.* As engineering representative of the Owner, and in accordance with sound and accepted engineering practices, the Engineer: (1) shall provide Construction Administration and Inspection services; (2) shall assist the Owner in obtaining the expeditious and economical construction of the Project in accordance with the approved plans and specifications, the terms of the construction contract or force account proposal, and 7 CFR Part 1753; and (3) shall have and exercise sole responsibility for the issuance of supplemental directives to the Contractor regarding the Contractor's performance in accordance with the terms of the construction contract as approved by the Owner and the Administrator. The Engineer's undertaking hereunder shall not relieve the Contractor of the Contractor's obligation to perform the work in conformity with the plans and specifications and in a workmanlike manner and shall not impose upon the Engineer any obligation to see that the work is performed in a safe manner. The Engineer shall not be responsible for the failure of the Contractor to perform the work in accordance with the contract or to perform the work in a safe workmanlike manner. In fulfilling the above responsibility, the Engineer shall as necessary:

1. Interpret the plans and specifications and convey such interpretation to the Contractor;
2. Inspect the progress of and quality of construction, in sufficient detail to provide reasonable assurance to the Owner of the adequacy of such progress and quality of construction, pursuant to the requirements of the plans and specifications and contract;
3. Confirm the acceptability of materials and equipment proposed by the Contractor to be utilized in the construction prior to the use of such materials or equipment on the Project and promptly reject materials and equipment not in compliance with the plans and specifications; and
4. Inspect the manner of incorporation of the materials and equipment into the Project, and the workmanship with which such materials and equipment are incorporated and reject materials, equipment and workmanship which the Engineer determines will not be in compliance with the plans and specifications. Such Inspection shall be deemed to be adequate if a reasonable percentage of all routine construction units (other than units requiring detailed inspection) are observed at the time of installation and found free of error.

The above enumeration of specific requirements shall not limit the general undertakings of the Engineer to perform services set forth in the first sentence of paragraph A of this section. The obligations of the Engineer hereunder are for the benefit of only the Owner and the Administrator,

and shall not relieve the Contractor of any of its own responsibilities under its contract with the Owner.

*B. Residents and Inspectors.*

1. A Resident with full authority to act for the Engineer shall be maintained by the Engineer at the site of the Project at all times during the entire period of scheduled construction (including times when the Resident is available and through no fault of the Engineer scheduled construction is not performed, and including times when corrective work is being performed) unless specifically directed otherwise by the Owner with the approval of the Administrator. A Resident shall be necessary for each outside plant construction contract.
2. If, at any time during construction, a Resident, or Inspector, is not required at the Project site, or such personnel are not available because of other responsibilities on the Project, the Engineer shall assign a Resident and/or Inspector on an intermittent basis, to effect necessary observations of construction during any critical phase of such construction.
3. If the Engineer determines that particular components of the work or particular circumstances during construction require the presence of a specialized representative of the Engineer, such as an architect, structural engineer, design engineer or other specialist for the purpose of interpreting contract requirements, or performing special inspections or tests to facilitate compliance by the Contractor with the plans and specifications and terms of the construction contract, the Engineer with prior approval of the Owner shall assign such personnel to the Project site.
4. The Engineer shall maintain at the site of the Project and under the direct supervision of the Resident a sufficient number of qualified Inspectors, to fully discharge the responsibility of the Engineer pursuant to paragraph A of this section (including times when such assigned Inspectors are available and through no fault of the Engineer scheduled construction is not performed). The number of Inspectors so required will vary with the size of the Project, the number of construction crews, and the speed of construction.
5. The number of Residents and Inspectors required by the Engineer for a routine construction schedule for this Project to effect completion within the allowed number of scheduled "working days" is as follows:
  - a. \_\_\_\_\_ (\_\_\_\_\_) Residents(s);
  - b. \_\_\_\_\_ (\_\_\_\_\_) Inspectors(s);
6. In the event conditions should arise, through no fault of and beyond control of the Engineer, which would require the placement by the Engineer of additional Inspectors



(or Residents) on the Project, to accommodate special needs of the Owner (or Contractor, with approval of the Owner), then, with the approval of the Owner prior to their assignment to the Project, the Engineer shall assign such additional qualified personnel to the Project for the limited time of such requirements.

*C. Pre-Construction Conference.* A competent representative from the office of the Engineer, and the Resident (or Residents) to be assigned to the Project, shall conduct the outside plant pre-construction conference. The detailed notes taken by the Engineer on items discussed shall be furnished to all parties. Such notes shall be used by the Resident, as applicable, in interpreting the plans and specifications pursuant to paragraph A1 of this section.

*D. Project Office.* The Engineer shall establish and maintain a field office, with telephone service, in the proximity of the Project when construction is in progress and shall notify the Owner of the address and telephone number of such field office. Any notices, instructions or communications delivered to such field office shall be deemed to have been delivered to the Engineer.

*E. Defective Construction.* If the construction is by contract, the Engineer shall notify the Contractor in writing of all observed or otherwise determined defects in workmanship or materials in accordance with the terms of the construction contract. If the construction is by force account, the Engineer shall advise the Owner relative to the correction of such defects.

*F. Joint Use or Joint Occupancy.* In connection with all joint use or joint occupancy construction, the Engineer shall:

1. Coordinate construction activities for the Owner with the designated representative of other parties to joint use or joint occupancy agreements;
2. Review for the Owner all changes proposed by other parties to joint use or joint occupancy agreements for changes in and additions to their existing pole lines under such agreements and submit to the Owner recommendations thereon.

*G. Tests.* The Engineer shall conduct, or cause to be conducted, such tests of circuits and equipment as required by the Owner and the Administrator to determine compliance with the performance requirements of the plans and specifications. The Engineer shall make recommendations in writing for the correction of defective materials, workmanship, or equipment. All cases of transmission or operational difficulties due to faulty construction or defective materials or equipment in the Project shall be reported in writing to the Contractor for correction if the construction is by contract or to the Owner if construction is by force account. When the corrections have been made, the circuits and equipment shall again be tested. The Engineer shall furnish test equipment as required for performing all required tests or measurements.

The outside plant tests to be made on this Project are noted in the table below:

Description of Test or Measurements	Test or Measurements		Will perform or participate in performing tests	
	Subscriber Loop Plant	Trunk Plant	Owner	Engineer
C.O. Ground Measurement				X
Copper Shield or Shield/Armor Continuity	X	X		X
Conductor Continuity	X	X		X
Shield or Armor Ground Resistance	X	X		X
Conductor Insulation Resistance	X	X		X
DC Loop Resistance				
DC Loop Resistance Unbalance				
VF Insertion Loss				
Loop Measurements (Loop Checking)				
Two-Person Structural Return Loss				
One-Person Open Circuit Measurements				
Cable Insertion Loss at Carrier Frequency				
Fiber Armor Continuity	X	X		X
Fiber Optic Splice Loss - Field	X	X		X
Fiber Optic Splice Loss - C. O.	X	X		X
End-to End Attenuation	X	X		X
End-to End Fiber Signature	X	X		

As appropriate, complete the table using these symbols:

- X - These are standard tests and measurements required on facilities as desired by the owner or required by the Administrator.
- \* - These tests will not be required if the distribution pairs are not cross-connected to feeder pairs at the time of acceptance testing.
- N/A - Not Applicable

*H. Connecting Companies.* The Engineer shall coordinate all engineering and construction activities with connecting companies and shall notify the Owner when the Project, or a section thereof, shall be ready to be placed in service. After giving such notice, the Engineer shall, when directed to do so by the Owner, cause the Project, or such section thereof as may be ready, to be placed in service.

*I. Reporting.* The Engineer shall prepare, execute and submit to the Owner \_\_\_\_\_ (insert frequency of reporting - minimal monthly) all estimates, certificates, reports, and other documents required to be executed by the Engineer pursuant to a construction contract, a force account proposal, or the 7 CFR Part 1753. The Engineer shall review and, if satisfactory, recommend for approval each periodic estimate submitted by contractors prior to approval and payment by the

Owner. Such recommendations shall include a statement by the Engineer based on the Engineer's Inspection of executed work and the progress of the work and subject to evaluation and testing of the work as a completed Project, that all construction for which payment is requested has been completed and cleaned up in accordance with the terms of the construction contract and that all defective construction of which the Contractor shall have received fifteen (15) or more days written notice, has been corrected.

The Engineer shall maintain a cumulative inventory of all units of construction incorporated in the Project, showing unit prices and extended totals, for all such units of construction. When it appears that the previously approved contract total is likely to be exceeded, the Engineer shall immediately notify the Owner in a format suitable for notifying the Administrator. When requested by the Owner or when the "Overrun" results in 20% above the contract total, the Engineer shall prepare a contract amendment in accordance with 7 CFR Part 1753 for execution by the Parties to the construction contract, to cover the additions or changes in construction units that are resulting in such "Overrun".

*J. Final Inspection.* The Owner and a representative of the Administrator will normally conduct a final inspection of completed construction. When requested by the Owner, a qualified representative of the Engineer shall be present.

## **Section 2. Final Documents.**

*A. Contract Construction.* If the Project or any portion thereof shall be constructed pursuant to a construction contract, the Engineer shall prepare and submit to the Owner complete and detailed final documents as specified in 7 CFR 1753 and a statement of all amounts payable by the Owner under the construction contract. The final documents shall be in a format suitable for approval by the Owner and subsequent submission to the Administrator for approval. These final documents shall be submitted to the Owner within forty-five (45) calendar days after the completion of construction based on the date shown on the certificate of completion covered by each contract.

*B. Force Account Construction.* If the Project or any portion thereof shall be constructed by force account:

1. Within thirty (30) calendar days after completion of construction of the Project, the Owner shall furnish to the Engineer the following data:
  - a. The cost of all materials used in construction of the Project;
  - b. Cost of right-of-way clearing (direct labor costs);
  - c. All direct labor costs chargeable to construction exclusive of the right-of-way clearing; and

- d. A list of all items of overhead cost applicable to the construction of the Project, but excluding the cost of engineering, legal, accounting and other professional services, interest during construction and preliminary survey charges.
2. Within forty-five (45) calendar days after the completion of construction of the Project, the engineer shall prepare and submit to the Owner for approval complete and detailed final documents in such form as the Administrator may prescribe, including without limitation, a final inventory of construction and a final inventory of retirements. The final documents shall contain the labor and material unit costs based on data supplied by the Owner.

*C. Number of Copies.* Copies of final documents shall be furnished in accordance with 7 CFR Part 1753.

### **Section 3. Plant Records.**

*A. Prior to Cutover.* If the Owner shall have notified the Engineer not later than ten (10) days prior to of the start of construction in a central office area that the Owner elects to assign to the Engineer the preparation of any of the following plant records, the Engineer shall prepare and deliver these records to the Owner, not later than fifteen (15) calendar days prior to the start of Cutover of each central office area included as a part of the Project. These records cover the Cutover work on facilities completed as of the date of delivery of such records for each such area. The following records shall be in such form as the Owner, with the approval of the Administrator, may prescribe:

1. Cable schematics, corrected to show "as constructed" conditions of that portion of the Project as of such date;
2. Cable records data, for completed line segments as of such date;
3. Line and station data for completed line segments as of such date; and
4. Terminal assignment records.

*B. After Cutover.* The Engineer shall deliver to the Owner, within thirty (30) calendar days after Cutover of facilities in any completed exchange area or completed section of the Project, the record drawings of the following plant records covering such Project area (excluding any of such records that the Owner has previously elected to prepare with its own forces):

1. Cable schematics, corrected to show "as constructed" conditions of such Project area;
2. Cable record data, for all construction completed in such Project area;

3. Line and station records for all lines completed in such Project area as a part of the Project;
4. Final maps, showing record drawings facilities completed in such Project area; and
5. Final complete and detailed construction sheets, showing facilities completed in such Project area, including the designation of assembly units of existing plant retained in place along existing plant lines segments on which modification work was performed as a part of the Project.

**Section 4. Inventory and Appraisal.** When requested by the Owner, the Engineer shall prepare within thirty (30) calendar days after completion of construction of the Project and submit to the Owner an inventory and appraisal of all existing telephone plant retained as part of the Owner's system. The inventory and appraisal shall be in such form and provide such data as the Owner, with the approval of the Administrator, may prescribe.

**Section 5. Compensation.**

*A. For Services Under sections 1, 3 and 4.* The Owner shall pay the Engineer "time and expense" compensation, as defined and detailed in current Table 2 of this Agreement for all services performed under sections 1, 3 and 4. Compensation under this section shall not exceed \_\_\_\_\_ dollars (\$\_\_\_\_\_) unless said amount has been increased by a contract amendment approved by the Owner and the Administrator. Appropriate documentation justifying the increase shall accompany the contract amendment.

Compensation under paragraph A of this section shall be due and payable as follows:

1. Ninety-five Percent (95%) thereof shall be due and payable ten (10) days after delivery each month of the invoice of the Engineer;
2. The balance of such compensation shall be due and payable ten (10) days after delivery of a statement by the Engineer to the Owner certifying that all final documents prepared by the Engineer, for execution by the Contractor, have been mailed or delivered to the Contractor for execution.

*B. For Services Under section 2.* The Owner shall pay the Engineer for all services performed under section 2 as follows:

1. The sum of \_\_\_\_\_ dollars (\$\_\_\_\_\_) for each service entrance to be installed, replaced or modified during the construction of the Project; plus
2. The sum of \_\_\_\_\_ dollars (\$\_\_\_\_); or when the Project is divided into sections for which separate outside plant plans and specifications are prepared, the sum of \_\_\_\_\_ dollars (\$\_\_\_\_\_) for each section requiring final documents; plus the sum of \_\_\_\_\_ dollars (\$\_\_\_\_\_) for each mile

of Project line facilities included in the final documents. Ninety-five (95%) percent of the compensation under this paragraph shall be due and payable ten (10) days after approval by the Owner and the Administrator of the respective final documents and the balance of the compensation under this paragraph shall be due and payable ten (10) days after completion of the Project as defined in the Table 1.

*C. Bi-weekly Statement.* For compensation covered by paragraph A this section, the Engineer shall submit to the Owner a biweekly statement showing the names of the Residents and Inspectors, and the actual time spent on the Project by each Resident and each Inspector during the preceding period. The statement should be prepared and submitted to the Owner in a format similar to that shown in RUS Form 217, Exhibit A.

**Section 6. Section Reference.** Unless otherwise specified or indicated, any reference to "section" shall mean within this attachment RUS Form 217g - Outside Plant Construction-Project Direction, Inspection, Testing and Contract Closeout.