SECTION 33 01 00

MAINTENANCE, SUPPORT AND RESTORATION OF UTILITY FACILITIES

PART 1 - GENERAL

1.01 DESCRIPTION

A. This section specifies protecting, supporting, maintaining and reconstructing existing utility facilities affected by construction, including but not limited to the following:

1. Storm, sanitary and combined sewer facilities.
2. Water distribution and service
3. Gas distribution and services.
4. Electric light and power facilities and services.
5. Telephone, telegraph and GSA communication facilities and services.
6. Police and fire alarm systems.
7. Traffic signals and street lighting, temporary and permanent.
8. Steam distribution facilities.
9. Parking meter installations.

B. Related Work Specified Elsewhere:

1.	Selective Demolition:	Section 02 41 00.
2.	Grading, excavating and backfilling:	Section 31 23 00.
3.	Sanitary Sewer:	Section 33 30 00.
4.	Storm Sewer:	Section 33 40 00
5.	Removal and restoration of existing facilities:	Section 02 43 17.
6.	Concrete reinforcement:	Section 03 20 00.
7.	Concrete:	Sections 03 10 00 and 03 30 00.

C. Work by Others:

1. Gas distribution and services: Gas company will do its own work.

D. Definitions:

1. Facility: Utility structures and system components belonging to utility company including service lines which are used to provide service to utility's customers and product which these facilities convey.
2. Utility: Company, agency, owner or operator of facility concerned.
3. Abandoned: Use of facilities shown as existing has been discontinued by the owners and operators. Demolish or remove such facilities to extent they conflict with proposed work.
4. To be abandoned: Particular facility will be removed from operation and/ or replaced by other facilities after written notice has been received that service is no longer required. Maintain service for as long as required, including temporary support, rerouting, substitution of temporary facility or other measures, as directed by the Engineer. Demolish or remove such facilities to extent they conflict with proposed work.
5. Maintenance: Ensuring continuous and satisfactory service during construction.
6. Proposed facility:

a. New facility constructed and, if necessary, temporarily supported in place, by the Contractor.

b. Temporary facility constructed, supported in place and ultimately removed and new facility constructed, by the Contractor.

c. New facility constructed as part of rapid transit construction.

7. Temporary facility: Facility provided by the Contractor in lieu of existing or proposed facility, to ensure continuity of service.

8. Maintain complete-in-place: Support and maintenance in serviceable condition, of existing facilities during construction, which may include constructing permanent support, temporary support or other measures necessary to maintain continuous service of existing facility.

9. Expose and maintain existing cables and replace ducts and manholes: Remove existing duct and manhole structures, construct temporary manholes, place existing cables in split conduits and replace spare ducts with whole conduit. Maintain this system during construction. Reconstruct permanent concrete manholes and encase conduits in concrete as specified. Cables for electric power and telephone facilities shall be exposed, separated and supported under supervision of electric power and telephone companies.

10. Maintain service and replace:

a. Construct new facility in same location and support it in place.

b. Provide temporary facility and ultimately remove it, and construct permanent replacement facility in its original location.

c. Temporarily support original facility and ultimately replace it with new facility.

11. Remove and replace: Remove existing facility without providing temporary replacement and reconstruct new facility in same location during execution of contract.

12. Local Jurisdictional Authority: Agency responsible for acceptance and approval of work on storm, sanitary and water distribution facilities.

13. Salvage: Remove and store material and equipment for reuse in this or other Authority contracts.

1.02 SUBMITTALS

A. Schedule of Work on Utility Facilities:

1. Submit to the Utilities and the Engineer a detailed sequence of work, with starting and ending dates for each interruption of utility services, and method of coordination for shutoff, capping and continuation of utility services.

2. Give notice at least two weeks prior to date of intended commencement of operations to parties having surface, subsurface or overhead structures in the construction area.Provide copies of notices to the Engineer.

3. Do not commence work until written approval has been received from the Utility and the Engineer.

C. Record Documents:

1. Show actual location of existing facilities, interference which these facilities present to new work, proposed method of proceeding with actual construction and details of proposed support systems.
2. Show actual location of settlement measurement points for facilities as indicated on the drawings. Submit copies of readings and measurements within 24 hours after such readings are taken.
3. Prior to construction, submit two copies of records of inspection of sewers, one copy to local jurisdictional authority and one copy to the Engineer. On completion of tunneling and cut-and-cover and prior to paving or other construction over sewers, submit to local jurisdictional authority and the Engineer one copy each of the inspection records of sewers, including video-tape records of television inspections and coordinated logs, photographs and other records as specified by local jurisdictional authority for visual walk-through inspections. Obtain and submit a written approval and acceptance from local jurisdictional authority of the inspection records of preconstruction and post-construction conditions of affected storm and sanitary sewers.

1.03 QUALITY ASSURANCE:

A. Codes, Regulations, and Standards: Comply with codes and regulations of the jurisdictional authorities, published standards of owning utility agency, and ASTM: C136.

B. Inspection Of Sewers:

1. Employ a sewer inspection company which has been regularly engaged in television sewer inspections and which is acceptable to local jurisdictional authority to perform post-construction inspections of the following sewers:
   a. Western portion of project site: 12" Sanitary Sewer running from Manhole A to Manhole B (as labeled in the Contract Drawings), approximately 440'.
   b. Central portion of project site: 36" Combined Sewer running from Manhole C to Manhole D (as labeled in the Contract Drawings), approximately 300'.
   c. Southeast portion of project site: The Combined Sewer run made up of the following elements: The segment of 48" pipe running west of Manhole E to its intersection with the 54" pipe running south out of Manhole D; the segment of 36" pipe between Manhole E and Manhole F; and the segment of 24" pipe running east from Manhole F to the WMATA Property Line. The length of the total run is approximately 850'.
2. A pre-construction inspection of the sewers described above will be conducted by the Authority.
3. Submit to Local jurisdictional authority for prior approval one sample of the cassettes to be used.
4. Conduct preconstruction and post-construction inspections under conditions as nearly identical as practical and using the same company.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Coordinate with utilities who are furnishing materials for the work to determine availability, locations and required methods of storage and care of materials prior to incorporation into the work.

B. Transport store and handle materials in accordance with the requirements of the utilities.

1.05 PROJECT CONDITIONS:

A. Existing Facilities:

1. Locations of existing facilities shown are plotted from available records; however, these locations are not guaranteed.
2. Verify by field investigation and “Miss Utility” utility locating service, locations of facilities within and adjacent to limits of project which may be affected by construction operations. Avoid damage or disruption of facilities during operation.
3. Upon encountering existing facility which is not shown or upon ascertaining that facility differs from that shown, determine ownership, use and disposition of such facility and proceed as follows:
   a. If facility is abandoned or is to be abandoned, perform necessary work for either condition as specified.
   b. If facility is to remain in service, perform support and restoration work in accordance with these Specifications and the CHANGES article of the General Provisions.

B. Temporary Service:

1. Do not interrupt facility service to building connections unless permitted in writing by Engineer, and then only after arranging to provide temporary service as required.
2. Notify the Engineer and the Utility of damage to facilities caused by construction operations. Repair such damage, except that damaged cables will be repaired or replaced only by the Utility.
3. Provide access for inspection of facilities and for emergencies involving utility service.
4. Permit free and clear access to utility personnel for purposes of inspection, maintenance, providing additional service and construction of new facilities.
5. When approved working or shop drawings show temporary facility provided for the Contractor's benefit, supply necessary materials and perform necessary work.
6. Pay utility directly if, as an aid to the Contractor's construction, the utility performs work not shown.
7. Items supplied by the utility companies are as listed and as shown.

1.06 Coordination:

A. Establish through the Engineer direct and continuous contact with respective utilities and cooperate with them in all phases of the work.

B. Contact utility early enough to allow them sufficient time to accomplish the work. Give special consideration to lead times required for cable work. Provide schedule of utility relocation to the utility to permit coordination with Authority's construction sequence.

C. To locate buried telephone cables, call the local telephone company's Buried Cable Location Service at least 48 hours prior to starting excavation.

D. Comply with printed standards and practices of utilities available from the Engineer.

E. Aerial facilities shown to be relocated by others will be relocated by facility owner. The Contractor is responsible for coordinating relocation work with utility owner as far as possible in advance of required time of relocation. A minimum three-month lead time is required by utility owner when facility serves only one utility. When facility to be relocated is shared by more than

one utility agency or when a street light is included in the relocation, a minimum four-month lead time is required

PART 2 - PRODUCTS

2.01 MATERIALS:

A. Refer to individual Division 2 Storm, Combined And Sanitary Sewer, Water Distribution and Services, Ducts and Manholes Sections for pipe, tubing, fittings and appurtenances, and for joining and installation methods.

B. Refer to individual Division 3 Concrete and Reinforcement Sections for materials and installation methods.

C. Sand Backfill Around High Voltage Conduits And Pipes:

1. Thermal Resistivity Value (RHO) of not more than 70 and the following sieve analysis when tested in accordance with ASTM C136:

	Sieve Size	Percent Passing
	4	94 - 100
	8	80 - 90
	16	60 - 80
	30	35 - 60
	50 100	31 - 35 3 - 13
	200	1 - 5

2. The power company, through the Engineer, will inform the Contractor of approved sources for this material.

PART 3 - EXECUTION

3.01 SALVAGE:

A. Salvage and clean material shown to be salvaged.

B. Maintain adequate records and storage facilities for salvaged items as specified in the General Requirements. Make available for inspection a detailed record including signed vouchers and receipts.

C. Reuse salvaged items after inspection and approval for reuse has been given by the Utility

D. Return salvaged materials which are not reused to the Utility.

3.02 SETTLEMENT OR MOVEMENT:

A. Where settlement or movement monitoring system is shown, comply with the following:
   1. Provide series of settlement measurement points along each facility and make regular readings to detect movements.
   2. Use approved painted marks, metal marker plugs or pins as settlement measurement points.
   3. Prior to subsurface work, make initial survey to establish elevations of installed settlement measurement points utilizing permanent, established bench marks outside 100-foot line.
   4. Take readings weekly on settlement points until completion of this Contract. Take readings daily during work which may affect facilities.
   5. Make readings to an accuracy of 0.01 foot.
   6. Take immediate remedial measures to correct conditions causing settlement or other movement and to repair damages thus caused.

3.03 EXCAVATION AND BACKFILLING OF UTILITY TRENCHES:

A. Excavate and backfill utility facility trenches in accordance with Sections 31 23 00.

B. Proceed with caution in areas of utility facilities; expose them by hand excavation or other methods acceptable to facility owner.

3.04 SURFACE RESTORATION:

A. Remove pavements, sidewalks, lawns, landscaping, curbs and gutters where necessitated by utility trenches..

B. Replace pavements, sidewalks, curbs and gutters in accordance with Section 02 43 17.

C. Place temporary pavements where necessitated by sequence of operations.

D. Replace lawns and landscaping in accordance with Sections 32 91 19.

E. Provide erosion control measures to prevent erosion or displacement of soils and discharge of sediment bearing water or airborne dust from the site.

3.05 UNSAFE AND UNSUITABLE UTILITY STRUCTURES:

A. General Requirements:
   1. If upon exposure, condition or location of facility to be supported in place is found to be unsafe for maintenance or support, replace or reconstruct facility as required after receiving prior approval of the Engineer and Utility Owner.
   2. Maintain continuity of existing utility facilities. Protect, support, relocate and reconstruct such facilities, regardless of jurisdictional control.

B. Electric, Communication and Similar Type Facilities:
   1. If structures containing electrical, communication and similar types of cables shown to be maintained complete in place are found upon exposure to be incapable of being maintained in place because of condition, location or both, replace such structures with timber enclosures or split ducts after prior approval of the Engineer and the utility owner.

2. When service box, manhole or conduit structure containing electrical or communication cables is broken away, replace it immediately with temporary structure having facilities for racking and supporting cables equivalent to existing facilities.
3. Exercise care when working in vicinity of telephone structures containing coaxial cable which cannot withstand movement.
4. Give timber enclosures one interior and one exterior coat of fire-retardant paint of type specified by owners and operators.
5. Replace temporary timber enclosures with permanent structures in accordance with details shown and restore facilities to the satisfaction of the Engineer and utilities prior to completion of work. Remove materials of temporary nature after completion of permanent installation.

C. Procedures for payment of costs of work on unsafe and unsuitable utility structures are governed by the CHANGES article of the General Provisions.

END OF SECTION