

DATE OF AVAILABILITY:

The project will be made available to the Contractor on or before July 3, 1972. This date will be considered the date of availability for the project. The Contractor may be permitted to begin work on the project prior to this date, subject to the approval of the Engineer and any seasonal limitations established by the Specifications. A01

COMPLETION DATE:

All work included in this contract is to be completed by September 1, 1972. A03

LIQUIDATED DAMAGES:

Liquidated damages for failure to complete this contract on time will be Seventy-Five Dollars (\$75.00) per calendar day. A04

PLANT PEST QUARANTINES:

Due to plant pest quarantines in various counties in which this project may be located, the Contractor will be required to contact the local Plant Pest Control Office of the U.S. Department of Agriculture to determine if any part of this project or any area of his operations in connection therewith is within the quarantine area. If so, the Contractor shall thoroughly clean and wash all equipment that moves out of the quarantine area at any time during or after construction of the project, and shall comply with any other restrictions or regulations as required by the U.S. Department of Agriculture and the North Carolina Department of Agriculture. A20

MAJOR AND MINOR CONTRACT ITEMS:

The following listed items will be considered to be the major contract items for this contract:

<u>ITEM NO.</u>	<u>DESCRIPTION</u>
6-SP-U	6" Asbestos Cement Water Pipe, Class 150
7-SP-U	8" Asbestos Cement Water Pipe, Class 150
18-SP-U	4" Vitrified Clay Sewer Pipe
19-SP-U	6" Vitrified Clay Sewer Pipe

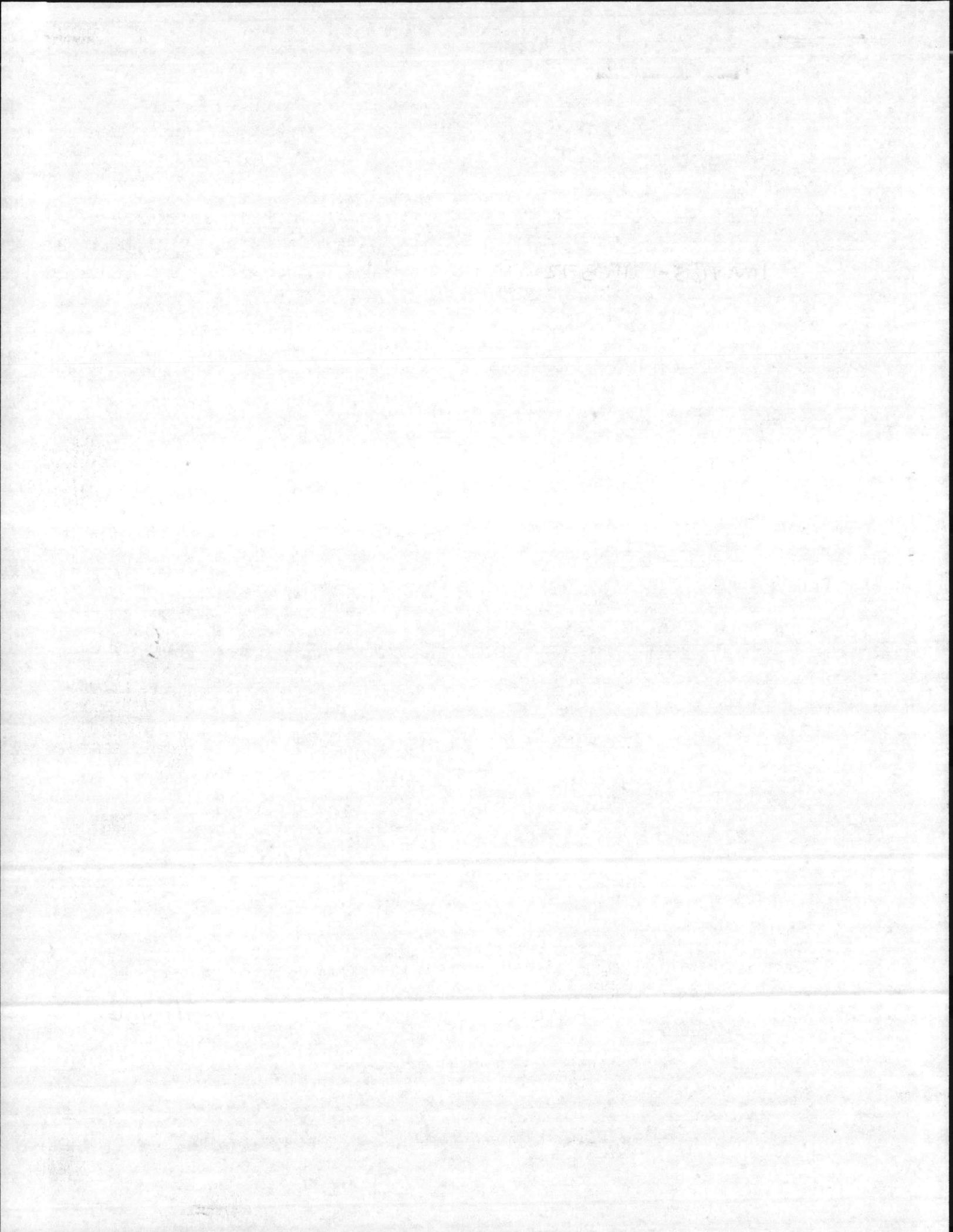
All items not included above will be considered to be minor contract items. B01

SPECIALTY ITEMS:

Items having the following line code numbers will be considered the specialty items for this contract:

<u>LINE CODE NO.</u>	<u>DESCRIPTION</u>	B03
24	Install Complete Electric Distribution System and Fire Alarm System	

ENCL (3)



DESCRIPTION OF WORK

Construct new electrical distribution system as shown on plan sheet 6. This new system shall consist of primary, secondary, and service drop wire, placed on aerial poles, with transformers, and street lights. A fire alarm system shall also be installed to serve the new area.

DESCRIPTION

Install 4 inch & 6 inch sewer service laterals, cleanouts, and 8 inch sewer line, as shown on plan sheet 4, to supplement and upgrade the existing unused sewer system complex so as to accomodate approximately 40 dwellings that will be moved into the area under another contract.

Rebuild to acceptable standards, and furnish new manhole rings and covers to existing sanitary sewer manholes, also build two (2) new manholes.

Replace existing 8 inch VC sanitary sewer pipe that is defective. (See plan sheet 4).

DESCRIPTION

Install 8 inch asbestos cement water main, and also 6 inch asbestos cement intermediate lines and valves with 3/4 inch, and 1 1/4 inch galvanized steel water pipe service laterals with curb stop and drain valves, box and cover, also install 2 fire hydrants with companion 6 inch gate valves, and necessary 6 inch AC water pipe, as shown on plan sheet 5.

## 2.0 REFERENCES:

## 2.1 Standard Specifications:

Whenever the term "Standard Specifications" is used, it shall mean the North Carolina State Highway Commission's "Standard Specifications for Roads and Structures" revised January 1, 1965.

## 2.2 Abbreviations:

The abbreviations used herein and their meanings are as follows:

AASHO	American Association of State Highway Officials
ACI	American Concrete Institute
AIEE	American Institute of Electrical Engineers
AISC	American Institute of Steel Construction
USAS	United States of America Standards Institute
ASCE	American Society of Civil Engineers
ASTM	American Society of Testing Materials
AWSC	American Welding Society Code
AWWA	American Water Works Association
NEMA	National Electrical Manufacturers Association
NEC	National Electrical Code
RBM	Reinforced Brick Masonry and Lateral Force Design - Plummer and Blume
FS	Federal Specifications
ANSI	American National Standards Institute



### 3.0 GENERAL CONSTRUCTION REQUIREMENTS:

The utility construction on this project shall comply with the applicable requirements of North Carolina State Highway Commission's "Standard Specifications for Roads and Structures" revised January 1, 1965 and the following special provisions. W03

#### 3.1 Approval of Owner:

All water and sewer and electrical installation work, covered in this contract shall meet the requirements of the United States, Camp Lejeune Marine Base. Representatives of the owners shall be provided access to any, and all phases of utility construction, and the contractor shall inform the owners two weeks in advance of the date when such installation work is to begin, in order that they may have a representative available if they desire. WO

#### 3.2 Pipe Line Locations shown on Plans:

The location of all utilities and appurtenant structures are shown on the plans from the best available information. However, the Contractor shall verify the information shown and shall be responsible for the test holes necessary to determine the exact location of pipe lines whenever such information is necessary for tying in of new construction to existing lines.

W05

#### 3.3 Abandoned Sanitary Facilities:

The elevation of all new manhole covers or adjusted manhole covers shall be set approximately flush with the ground, properly drained to prevent ponding and to prevent surface water from entering the manhole. W06

#### 3.6 Interruption of Service:

No valves or other controls on the existing systems shall be operated prior to notification of the owner of the system, except in case of an emergency. Insofar as is possible the construction of the new utilities shall be done so as not to disrupt service in the area. W09

### 4.0 TRENCHES AND BACKFILL FOR UTILITY PIPE LINE CONSTRUCTION:

#### 4.1 General;

The requirements of Section 228-3.1(a) of the Standard Specifications applying to the opening of trenches for the laying of pipe, except where otherwise provided herein. W10

#### 4.2 Responsibility for Condition of Excavation:

The Contractor will be responsible for the condition of all excavations made by him. Any slides or caves shall be removed immediately or when directed by the Engineer.

In general, all portions of the excavations for the structures shall be made so that the safe slope of the earth is not exceeded. It shall be the responsibility of the Contractor to properly and adequately protect any part of the excavation from caving or slipping by the use of sheeting, bracing or shoring as required. All timbering or underpinning shall be



put in place or driven by men skilled in such work and shall be so arranged that it may be withdrawn as backfilling progresses, without disturbing the pipe line or adjacent area.

All timbering in trench excavations shall be withdrawn in stages on both sides of the trenches (to prevent lateral movement of the pipe) as the backfilling progresses, except where the Engineer directs in writing that the timbering be left in place, or where he permits the timbering to be left in place at the Contractor's request. The Contractor shall cut off any sheeting left in place, at least twenty-four inches below finished grade wherever directed and shall remove and dispose of the material cut off. All sheeting or shoring left in place by order of the Engineer will be paid for as extra work. Compensation will not be made for timbering left in the trench at the Contractor's request.

Wherever necessary, in quicksand, soft, or wet ground or for the protection of surrounding structures and property, sheeting shall be driven, to such depth below the bottom of the excavation as may be necessary. The Contractor may use well points or other methods in lieu of sheeting to stabilize the banks or for protection, provided those methods give the equivalent of the above, in the judgment of the Engineer.

Rock shall be removed 6" on each side of pipe joints so that the joints may be properly made. The space below the outside diameter of the pipe shall be backfilled with select earth material and in the manner called for in the Specifications. W11

#### 4.3 Blasting:

The Contractor's attention is directed to the fact that blasting may not be permitted in certain areas. The Contractor during his investigation shall determine in the field those areas where blasting may be impractical and adjust his bid prices to allow for this requirement. Blasting near existing water pipe will not be allowed. W12

#### 4.4 Drainage of Excavations:

The Contractor shall take all measures necessary to keep surface water out of the foundations and trenches by diking, ditching or otherwise avoiding same. Provisions for surface drainage shall meet the approval of the Engineer.

All pipe line excavations shall be kept free of water while the work is in progress. Water may be removed by pumps or the use of underdrains, whichever will produce the above results. W13

#### 4.5 Excavated Material:

All excavated material shall be deposited in a manner that will not endanger the work and that will avoid obstructing sidewalks and driveways. Hydrants under pressure, valve pit covers, valves boxes, curb stop boxes, fire and police call boxes, or other utility controls shall be left unobstructed and accessible at all times. Gutters shall be kept clear or other satisfactory provisions made for street drainage, and natural water-courses shall not be obstructed. W14



#### 4.6 Backfilling:

All backfill material shall be free from rock or boulders having any one dimension greater than 6". It shall also be free from roots, vegetable matter, waste construction material or other objectional materials. All backfill shall be made in layers not exceeding six inches in thickness and shall be thoroughly tamped to prevent subsequent settlement. Special care shall be used in backfilling trenches to thoroughly tamp material free from all stones, around the pipe and to a thickness of 12" above the top of the pipe. Backfill above this elevation may be made by machine and compacted by wheeled or track laying equipment. Where the section to be backfilled is in a proposed roadway, the backfill will be in accordance with Section 228 of the Specifications. W15

#### 4.7 Grading:

All grading shall be completed to the final elevations shown on the plans. All filling material shall be reasonably free from stone and shall not contain roots, vegetable or other objectionable matter. All fill shall be placed in 6" thick layers and rolled or tamped to prevent subsequent settling. W16

#### 4.8 Disposal of Excess Material:

All excess excavated material, discarded construction materials, masonry, etc. shall be disposed of in accordance with the requirements of the standard special provision "Protection of Environment" included herein. W17

#### 4.9 Maintenance of Traffic:

During the progress of the work, sidewalks and crossings shall be kept open for the passage of pedestrians, unless otherwise authorized, streets shall not be obstructed, and unless the Engineer authorizes the complete closing of a street, the Contractor shall take such measures as may be necessary to keep the street open for traffic.

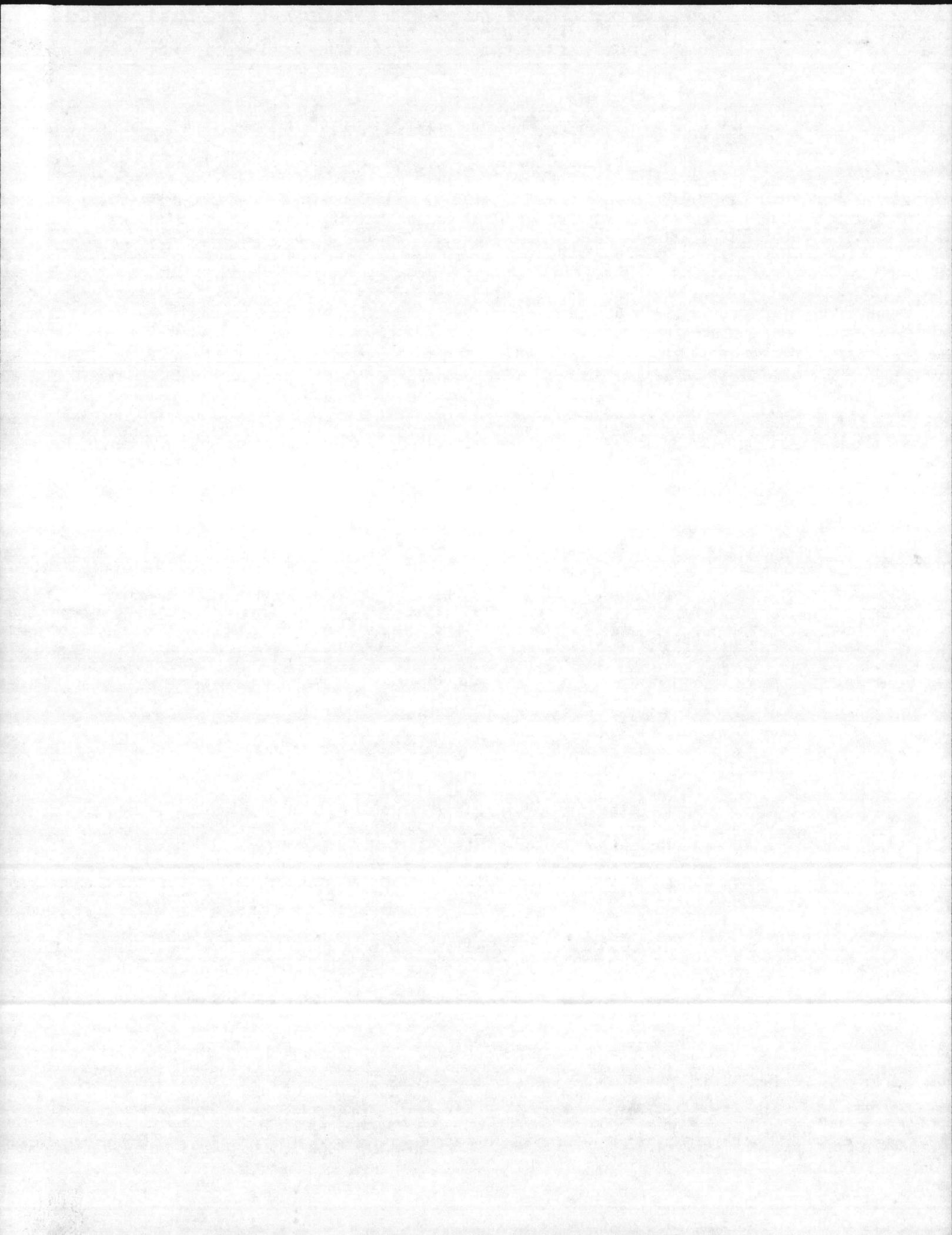
The Contractor shall construct and maintain such adequate and approved bridges, over excavations as may be necessary for the purpose of accommodating pedestrians or vehicles. W18

#### 4.10 Protection of Adjacent Structures:

The Contractor shall protect from injury, all pipes, conduits, poles, walls, buildings, and other structures in the vicinity of his work, whether above or below the ground, or that may be encountered in the excavations. W19

#### 4.11 Removal of Obstructions:

Should the position of any pole, pipe, conduit, or other structure, be such as, in the opinion of the Engineer, to require its removal or adjustment, such change will be done by the owner of the obstructions but the Contractor shall uncover and support the structures before such removal, and before and after such realignment or change, as constituting part of the contract and the Contractor shall not be entitled to any claims for damages or extra compensation on account of the presence of said structure or on account of any delay in the removal or rearrangement of same.



The Contractor shall break through and reconstruct, if necessary, the invert or arch of any sewer, culvert, or conduit that may be encountered if such structure is in such a position, in the judgment of the Engineer, as not to require its removal, or adjustment. This shall be done in such a manner as to not interfere with the flow of water or other liquid which said sewer, culvert or conduit is designed to carry. W20

## 5.0 UTILITY CONCRETE CONSTRUCTION:

### 5.1 Materials:

(a) The materials shall conform to the requirements of the Specifications as follows:

Portland Cement	Section 405
Coarse Aggregate	Section 403-1.2
Fine Aggregate	Section 403-1.1
Water	Section 420
Brick	Section 409-1.3(a)
Hydrated Lime	Section 409-1.4
Reinforcing Steel	Section 208
Gray Iron Castings	Section 417-2.5
Wrought Iron Castings	Section 417-2.7
Joint Filler and Seals	Section 408

(b) All concrete used in utility construction shall conform to the requirements of Section 207 of the Specifications. Concrete used for pipe protection and for plugging and filling abandoned lines shall be Class B. Concrete used for all other purposes shall be Class A.

## 6.0 WATER LINE CONSTRUCTION:

### 6.1 General:

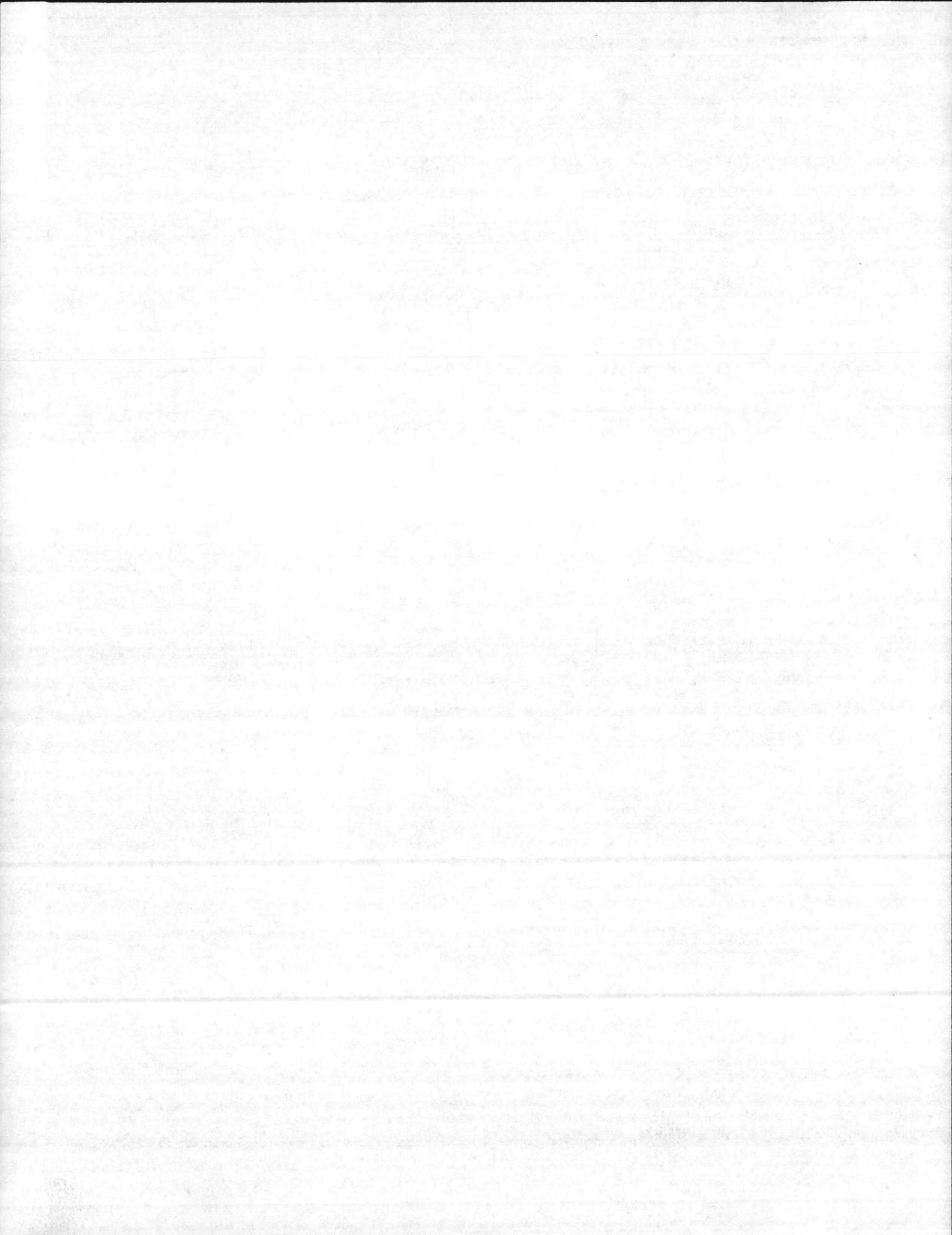
The Contractor shall furnish all materials, and shall construct the pipe lines and all required appurtenances, to the lines, and elevations shown in the plans or designated by the Engineer. All pipe and fittings shall be laid true to the lines and elevations set, and the directions given from time to time as the work progresses. Section 228 of the Standard Specifications shall apply, except as otherwise provided below. W22

### 6.2 Construction Methods:

(A) Keeping pipe lines clean: During the progress of the work and until the completion and final acceptance the pipe lines and their appurtenances shall be kept clean throughout. Any obstructions or deposits shall be removed.

(B) Defects: If, at any time before completion of the contract, any broken pipe or any defects are found in the lines or in any of their fittings or appurtenances, shall be replaced or corrected. All pipe, fittings, and appurtenances shall be carefully examined for defects before placing and any found defective shall not be used.

(C) Laying pipe in freezing weather: No Pipe shall be laid upon the



foundation into which frost has penetrated, nor at any time, that in the opinion of the Engineer, there is danger of the formation of ice or frost at the bottom of the excavation. The Engineer may allow construction of the pipe line to continue under freezing conditions provided the Contractor promptly backfills the trench as directed. W23

(D) Laying Water Pipe: Pipe and accessories shall be carefully lowered into the trench with suitable equipment. Under no circumstances shall any of the water-main materials be dropped or dumped into the trench.

Care shall be taken to avoid abrasion of the pipe coating: Poles used as levers for removing skids across trenches shall be of wood and shall have broad flat faces to prevent damage to the pipe or pipe coating.

Except where necessary in making connections with other lines or as authorized by the Engineer, pipe shall be laid with the bells facing in the direction of laying.

The full length of each section of pipe shall rest solidly upon the pipe bed, with recesses excavated to accommodate bells, couplings, and joints. Pipe that has been disturbed after laying shall be taken up and relaid.

Pipe shall not be laid in water or when trench conditions are unsuitable for the work. Water shall be kept out of the trench until jointing is completed. When work is not in progress, open ends of pipe, fittings, and valves shall be securely closed so that water, earth, or other foreign substances may enter.

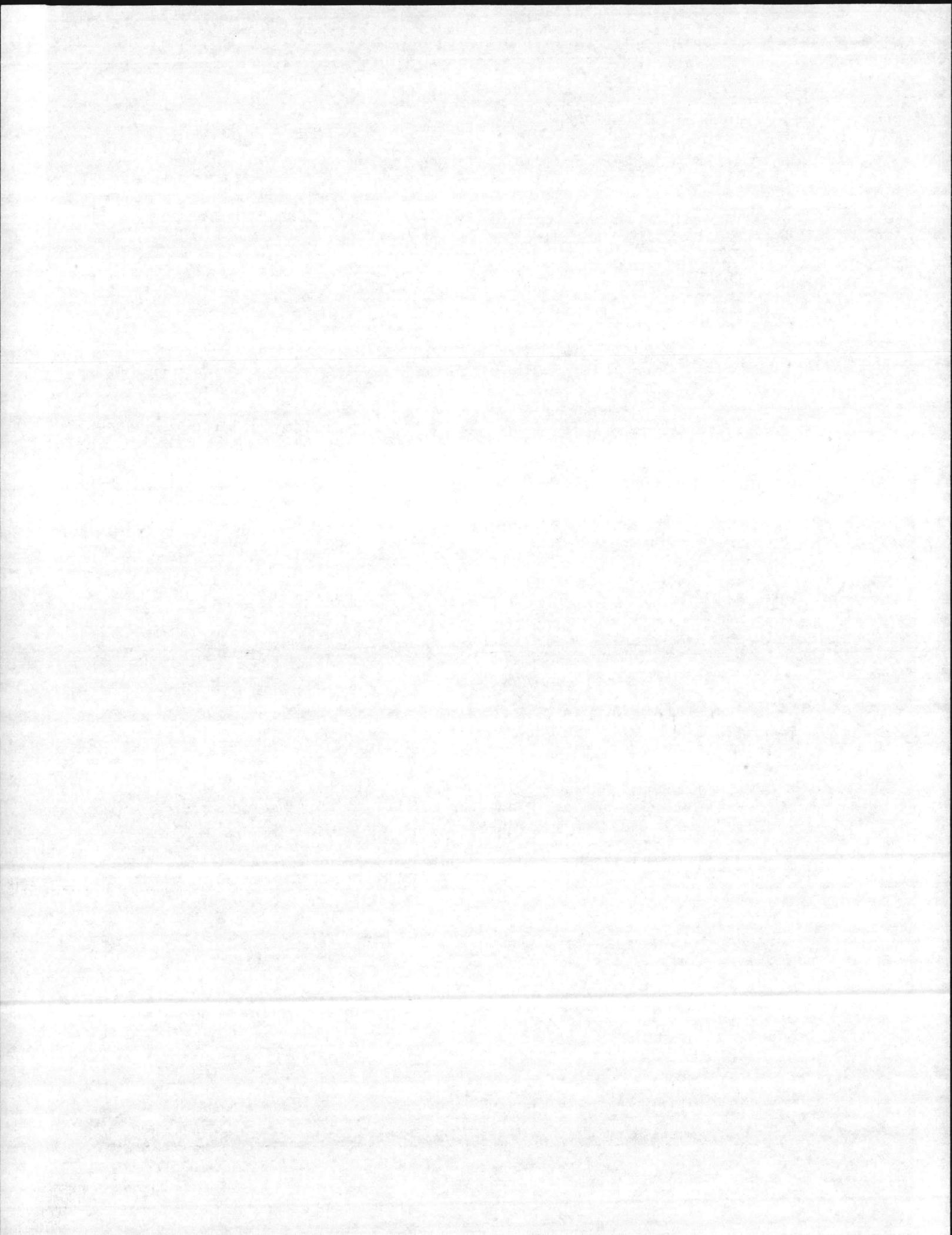
All pipe shall be laid true to lines and grades, and shall be laid such that a minimum cover of thirty six inches can be maintained. Due to the heights of valves, these depths shall be increased adjacent to the valves or varied at points of tie-in to existing lines as required. W24

(E) Jointing: Mechanical joints shall be made in accordance with the recommendations of the manufacturer. Joint bolts shall be drawn up equally around the entire periphery.

Rubber-gasket joints shall be handled, lubricated where necessary, and installed in accordance with the recommendations of the manufacturer. W25

(F) Reaction backing: Plugs, caps, tees, and bends deflecting 22-1/2 degrees or more on mains 6 inches in diameter or larger, and fire hydrants shall be provided with reaction backing, or metal tie rods and clamps or lugs as directed. Reaction backing shall be concrete of a mix not leaner than 1 cement: 2-1/2 sand: 5 gravel. Backing shall be placed between solid ground and the hydrant or fitting to be anchored. The area of bearing shall be as shown or as directed. Unless otherwise shown or directed, the backing shall be so placed that the fitting joints will be accessible for repair. Steel rods and clamps shall be protected by galvanizing or by coating with bituminous paint. W26

(G) Setting of fire hydrants: Fire hydrants shall be relocated as shown. Each hydrant shall be connected to the main with a 6-inch branch line having at least as much cover as the distribution main. Hydrants shall be set plumb with the pumper nozzle facing the roadway and with the center of the lowest



outlet not less than 18 inches above the finished surrounding grade and the operating nut not more than 3 feet above the finished grade. Except where approved otherwise, the backfill around hydrants shall be thoroughly compacted to the final grade immediately after installation to obtain beneficial use of the hydrant as soon as practicable. Not less than 7 cubic feet of clean crushed stone shall be placed around the base of the hydrant to insure drainage of the hydrant barrel.

W27

(H) Pressure Testing of Water Lines:

Where any section of a main is provided with concrete reaction backing for fittings or hydrants, the hydrostatic pressure test shall not be made until 3 days after installation of the concrete reaction backing, unless otherwise approved. The Contractor shall furnish all labor, materials and appurtenances to perform the tests.

After the pipe is laid, the joints completed, fire hydrants permanently installed, and the trench partially backfilled leaving the joints exposed for examination, the newly laid piping or any valved section of piping shall, unless otherwise specified, be subjected for 2 hours to a hydrostatic pressure test of 200 pounds per square inch. Each valve shall be opened and closed several times during the test. Exposed pipe, joints, fittings, valves, and hydrants shall be carefully examined during the open-trench test. Joints showing visible leakage shall be replaced or remade as necessary. Leaking rubber-gasketed joints shall be remade, using new gaskets if necessary. Cracked or defective pipe, mechanical joints, fittings, valves, or hydrants discovered in consequence of this pressure test shall be removed and replaced with sound material, and the test shall be repeated until the test results are satisfactory.

A leakage test shall be conducted after the pressure test has been satisfactorily completed. The duration of each leakage test shall be at least 2 hours, and during the test the main shall be subjected to 150 pound per square inch pressure. Leakage is defined as the quantity of water to be supplied into the newly laid pipe, or any valved section thereof, necessary to maintain the specified leakage test pressure after the pipe has been filled with water and the air expelled. No piping installation will be accepted until the leakage is less than the number of gallons per hour as determined by the formula:

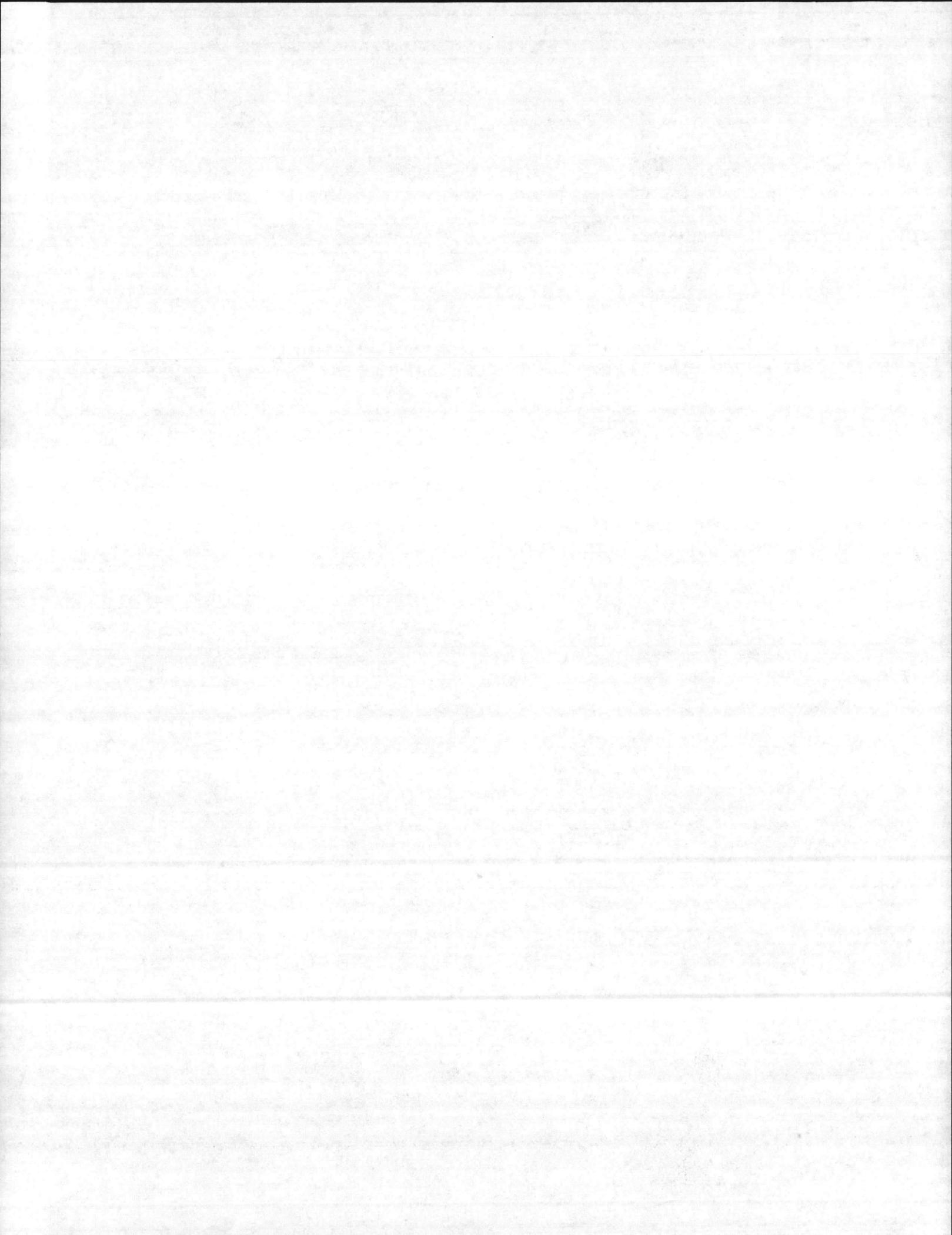
$$L = 0.00054 (N) (D) (\text{Square Root of } P)$$

In which L equals the allowable leakage in gallons per hour; N is the number of joints in the length of pipeline tested; D is the nominal diameter of the pipe, in inches; and P is the average test pressure during the leakage test, in pounds per square inch.

Should tests of any pipe laid disclose leakage greater than that specified above, the defective joints shall be located and repaired until the leakage is within the specified limits.

Except where concrete reaction backing necessitates a 3-day delay, pipelines jointed with rubber gaskets, lead, mechanical or bolted joints, or couplings may be subjected to hydrostatic pressure, inspected, and tested for leakage at anytime after sufficient completion of backfill.

X01



**(I) Sterilization of Water Lines:**

Before acceptance for domestic use, each unit of the completed water line shall be sterilized as specified below or as prescribed by AWWA Standard C601. After pressure tests have been made, the unit to be sterilized shall be thoroughly flushed with water until all entrained dirt and mud have been removed before introducing the chlorinating material. The chlorinating material shall be either liquid chlorine or hypochlorite. The chlorinating material shall provide a chlorine dosage of not less than 50 parts per million and shall be introduced into the waterline in an approved manner. The treated water shall be retained in the pipe long enough to destroy all non-spore-forming bacteria. Except where a shorter period is approved, the retention time shall be at least 24 hours and shall produce not less than 10 PPM of chlorine at the extreme end of the line at the end of the retention period. All valves on the lines being sterilized shall be opened and closed several times during the contact period. The line shall then be flushed with clean water until the residual chlorine is reduced to less than 1.0 PPM. During the flushing period each fire hydrant on the line shall be opened and closed several times. From several points in the unit, the Engineer will take samples of water in properly sterilized containers for bacterial examination. The sterilizing shall be repeated until tests indicate the absence of pollution for at least 2 full days. The unit will not be accepted until satisfactory bacteriological results have been obtained.

X02

**(J) Final connections to existing mains shall be made where indicated on the drawings or as directed, using specials and fittings as required to fit the actual conditions. The completed work shall meet the approval of the Engineer.**

X03

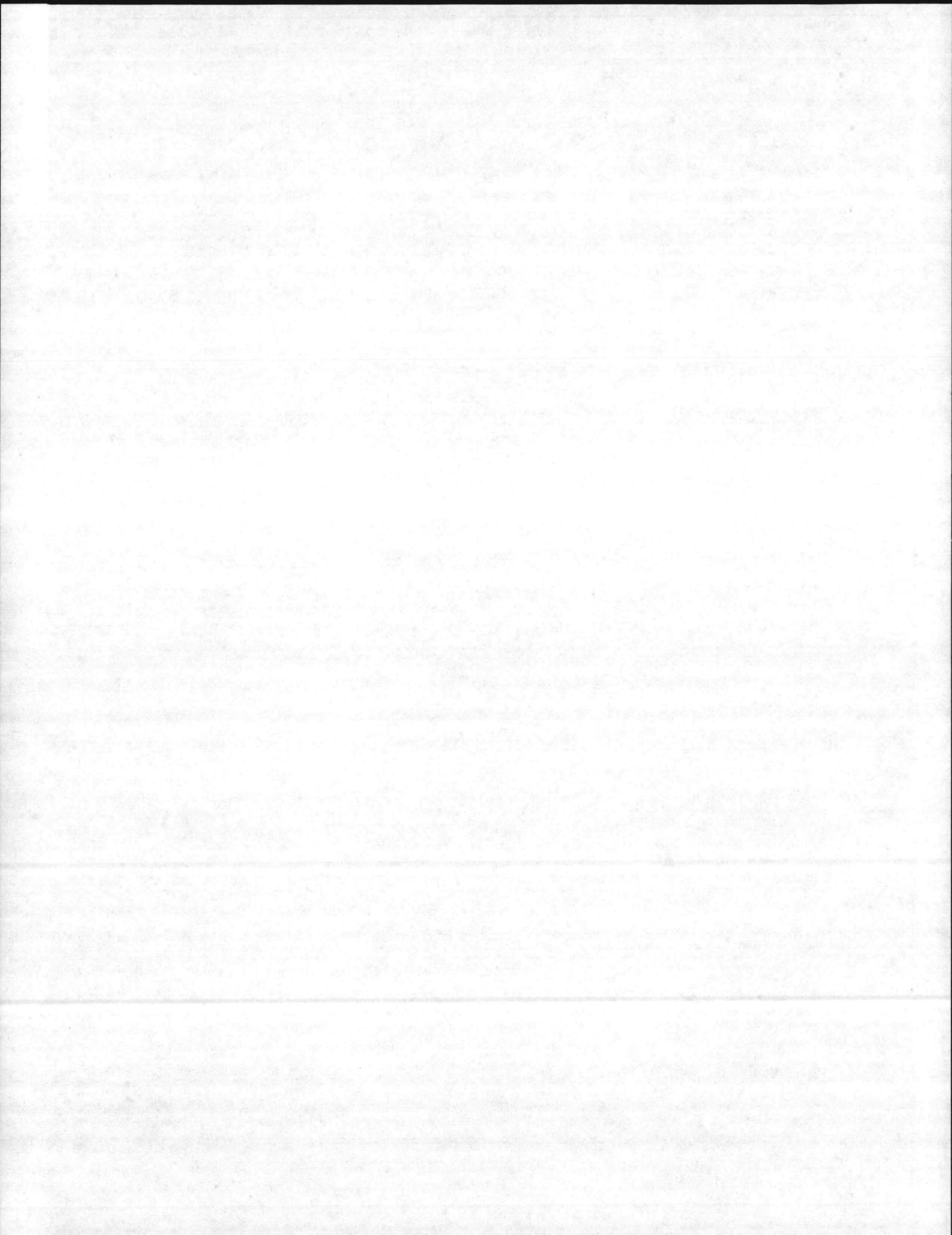
**7.0 SANITARY SEWER CONSTRUCTION:**

**(A) Laying Sewer pipe:** The bottom of the trench shall be shaped to give substantially uniform circumferential support to the lower fourth of each pipe. Pipe laying shall proceed upgrade with the spigot ends of bell-and-spigot pipe and tongue ends of tongue-and-groove pipe pointing in the direction of the flow. Each pipe shall be laid true to line and grade in such manner as necessary to form a close concentric joint with the adjoining pipe and to prevent sudden offsets of the flow line. As the work progresses, the interior of the sewer shall be cleared of all foreign materials of every description. Where cleaning after laying is difficult because of small pipe size, a suitable swab or drag shall be kept in the pipe and pulled forward past each joint immediately after the jointing has been completed. Trenches shall be kept free from water until the pipe-jointing material has set, and pipe shall not be laid when the condition of the trench or the weather is unsuitable for such work. At times when work is not in progress, open ends of pipe and fittings shall be closed so that water, earth, or other substances will not enter the pipe or fittings.

X04

**(B) Final connections of the proposed sewer work to the existing system shall be made where indicated on the drawings or as directed, using specials and fittings as required to fit the actual conditions. The completed work shall meet the approval of the Engineer.**

X06



**8.0A COMPENSATION:**

There will not be any direct payment for utility construction required by the preceding provisions, which are general requirements applying to utility construction, and all of the requirements stated will be considered incidental work, paid for at the contract unit prices of the various utility items included in the contract. X07

**8.0B CAST IRON PIPE FITTINGS:**

Cast iron water pipe fittings and specials shall be installed in accordance with the applicable utility provisions herein, and as shown on the utility plans.

Cast iron water pipe fittings and specials for cast iron or ductile iron water pipe shall conform to USAS A21.10, and AWWA C-100, Class D. These fittings shall be cement mortar lined with a seal coat in accordance with USAS A21.4.

The quantity of water pipe fittings installed and accepted will be measured and paid for at the contract unit price per pound, "Cast Iron Water Pipe Fittings". Such price and payment will be full compensation for all materials, labor, installation, backfilling and other incidentals necessary to complete the work as required. X09

**8.1 GALVANIZED STEEL WATER PIPE AND FITTINGS:**

Galvanized steel pressure water pipe shall be installed in accordance with the applicable utility provisions herein and as shown on the utility plans.

Galvanized steel pressure water pipe shall be of the strength class shown on the utility plans, and shall conform to ASTM A120. This type of pipe shall be assembled with galvanized malleable iron fittings made from cupola malleable iron conforming to ASTM A197. Threads for galvanized pipe and female threads on fittings shall conform to American Standard Taper Pipe Threads, USAS B2.1.

Galvanized steel pressure water pipe installed in accordance with the plans and utility provisions herein, and accepted will be measured along the pipe with no deductions for fittings and valves, and paid for at the contract unit price per linear foot for "Galvanized Steel Water Pipe" of the appropriate sizes and strength classes required. Such prices and payments will be full compensation for all materials, excavation, labor, installation, sterilization, backfilling, fittings, and incidentals necessary to complete the work as required. X10

**8.2 ASBESTOS CEMENT PRESSURE PIPE FOR WATER MAINS OR SANITARY SEWER FORCE MAINS:**

Asbestos cement pressure pipe for water or sewer force mains shall be installed in accordance with the applicable utility provisions herein and as shown on the utility plans.

Asbestos cement pressure pipe shall be of the pressure class and type shown on the utility plans, and shall conform to ASTM C-296, Type I, II, or III.



Asbestos cement pressure pipe installed in accordance with the plans and utility provisions herein, and accepted will be measured along the pipe (with no deductions made for fittings) and paid for at the contract unit price per linear foot for "Asbestos Cement Water Pipe" or "Asbestos Cement Force Main Sewer Pipe", of the appropriate sizes and types required. Such prices and payments will be full compensation for all Materials, excavation, labor, reaction backing, pressure testing, sterilization, earth backfilling, pavement repairs and incidentals necessary to complete the work as required. X12

### 8.3 VITRIFIED CLAY SEWER PIPE:

Vitrified clay sewer pipe shall be installed in accordance with the applicable utility provisions herein, and as shown on the utility plans.

Vitrified clay sewer pipe shall be extra strength pipe conforming to ASTM C200. This pipe shall be installed in accordance with ASTM C12, and as recommended by the manufacturer, or shown on utility plans, or as designated by the Engineer. All joints for vitrified clay pipe shall be factory-fabricated and shall be manufactured in accordance with the Standard Specifications for Vitrified Clay Pipe Joints Using Materials Having Resilient Properties, ASTM C425-64 or the latest revision of this standard. The joints may be Type I, II, or III as outlined in the Specification.

Vitrified clay sewer pipe installed in accordance, with the plans and utility provisions herein, and accepted will be measured along the pipe (with no deductions made for manholes), and paid for at the contract unit price per linear foot for "Vitrified Clay Pipe" of the appropriate sizes required. Such price and payment will be full compensation for all materials, excavation, earth backfilling, and incidentals necessary to complete the work. Y01

### 8.4 SANITARY SEWER MANHOLES:

The provisions of Section 307 of the Standard Specifications and Utility Provisions herein shall apply to manhole construction, except as provided below.

At the option of the Contractor precast manholes meeting the requirements of ASTM C478 may be used.

Manholes having a line entering above the invert of the manhole shall be provided with a drop in the line to the flow line of the manhole as shown on the details in the plans.

Sanitary manholes shall be constructed with invert channels as detailed in the plans to confine the flow of liquids thru the manhole.

Sewer Brick Made From Clay or Shale: ASTM C32-63. Brick shall be Grade SA or MA and of standard building size.

Concrete Block: Concrete block may be used for manhole construction when approved by the Engineer. All concrete block shall be of the special type manufactured for manhole construction, or equal to this type. Such manhole block shall conform to ASTM C139.



Hydraulic Cement Mortars in Chemical Resistant Masonry: ASTM Designation: C 398-65. All aggregates used in mortar mix shall conform to the NCSHC Specifications.

Gray Iron Castings: ASTM Designation: A 48. All manhole rings, covers, and steps, shall conform to this Specification. All test bars shall meet the requirements of Class No. 30 of this Standard. All casting shall be coated in conformance with ASTM Designation: A 74.

Masonry Structures: All masonry units shall be thoroughly clean. The bed which is to receive the masonry units shall be thoroughly cleaned and wetted with water before placing mortar thereon. A "shove joint" or a "vertical joint" method will be used to construct all masonry structures.

A "Shove joint" method is obtained by spreading an abundant amount of mortar along the base of the structure and then sliding the masonry unit in a lateral motion causing the mortar to extrude up between the two units and forming a solid joint. The masonry units shall be laid in a workmanlike manner, true to lines and grades indicated on the Plans. All joints shall have a thickness of at least 3/8".

A "vertical joint" will be used in manhole construction when shaped manhole block is being used. A 1/2-inch minimum joint will be constructed on both the bottom and top of the shaped block. A "vertical joint" is obtained by filling the circular shaped hole, formed by placing the ends of two shaped blocks together, with mortar. The mortar placed in this hole must be compacted with a tool specifically approved by the inspector. This tool will be kept at the job site and used on all occasions. No substitute for this tool will be permissible. The masonry units shall be laid in a workmanlike manner, true to lines and grades indicated on the Plans.

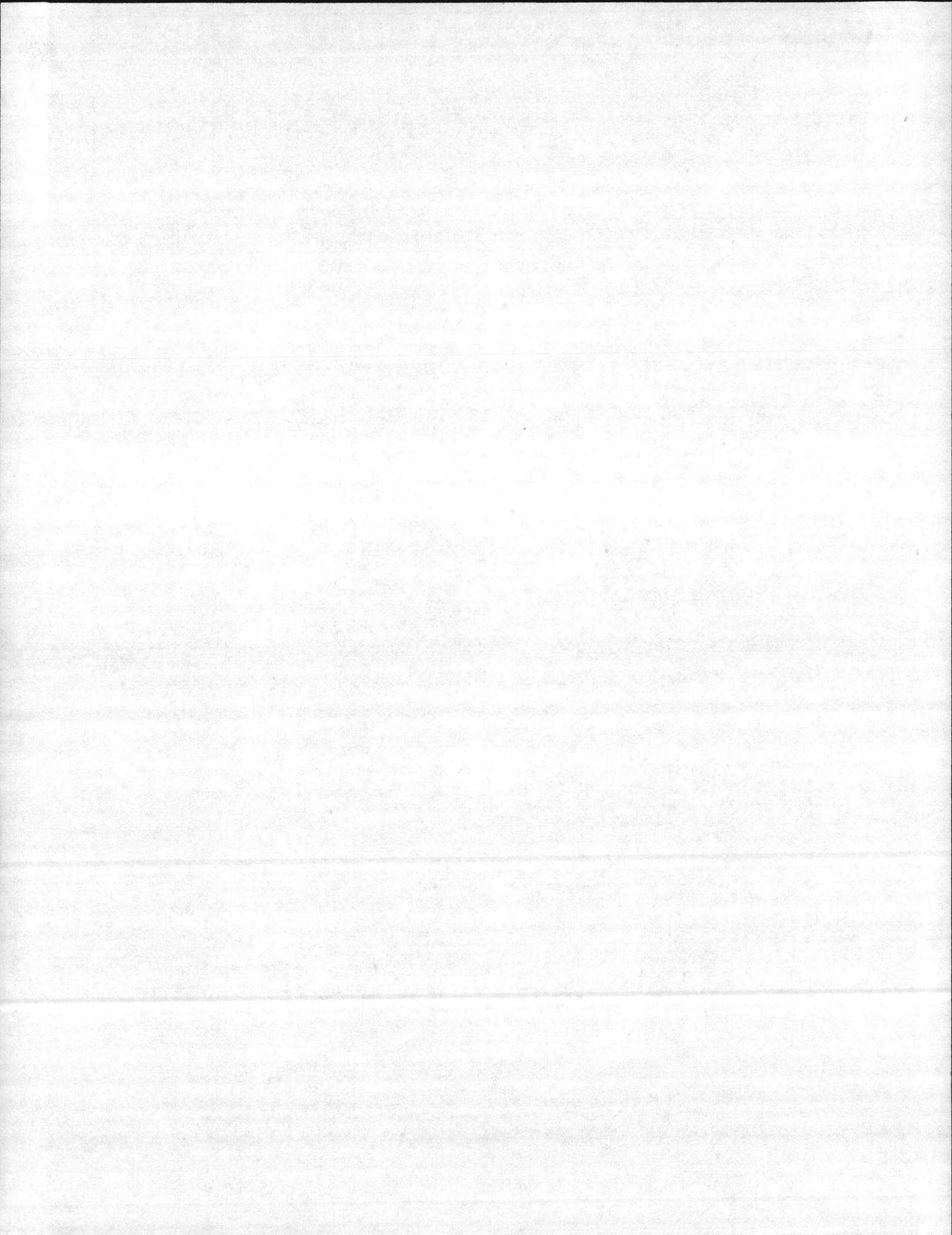
All backfill around structures shall be thoroughly tamped after backfilling with an approved tamping machine. The backfill around structures shall meet the same compaction specifications as subgrade under streets, curb, and sidewalks.

The quantity of standard sanitary manholes to be paid for will be the actual number of each constructed, six feet or less in height, measured from the flow line to the top of the manhole ring, and accepted.

The quantity of sanitary sewer drop manholes to be paid for will be the actual number of each constructed six feet or less in height, measured from the flow line to the top of the manhole ring.

The addition vertical wall height required to construct the manholes to heights greater than six feet, that has been constructed and accepted, will be measured for payment in linear feet.

The quantity of standard sanitary sewer manholes, measured as provided above, will be paid for at the contract unit price per each "Standard Sanitary Sewer Manhole" of the appropriate diameter. Such price and payment will be full compensation for all concrete, grout brick or blocks, rings and covers, excavation, backfilling, labor and other incidentals necessary to complete the basic manhole.



### 8.5 GALVANIZED C.M. ENCASUREMENT PIPE:

Plain or bituminous coated galvanized metal encasement pipe shall be installed in accordance with the applicable utility provisions herein and as shown on the utility plans. The ends of the encasement pipe shall be plugged, after installation, with brick and mortar, concrete, special caps, crushed stone or other material approved by the Engineer. In roadway areas the encasement pipe shall be backfilled in accordance with Section 228, of the Specifications.

Galvanized corrugated metal encasement pipe shall be of the size and gage called for in the plans or pay item descriptions, and meet the requirements of Sections 229 or 231 of the Specifications as the case may be. The pipe shall be either full circular sections of pipe, or half circular sections, known as nestable pipe, and assembled into full circular encasement pipe.

Corrugated metal encasement pipe installed in accordance with the plans and utility provisions herein and accepted, will be measured along the pipe and paid for at the contract unit price per linear foot for the appropriate size, type and gage "C.M. Encasement Pipe" or "Bituminous Coated C.M. Encasement Pipe" as the case may be. Such prices and payments will be full compensation for all materials, excavation, labor, installation, plugging or capping ends of encasement, backfilling and incidentals necessary to complete the work.

Y10

### WATER VALVES AND VALVE BOXES

Water valves and valve boxes shall be installed in accordance with the applicable utility provisions herein and as shown on the utility plans and as directed by the Engineer.

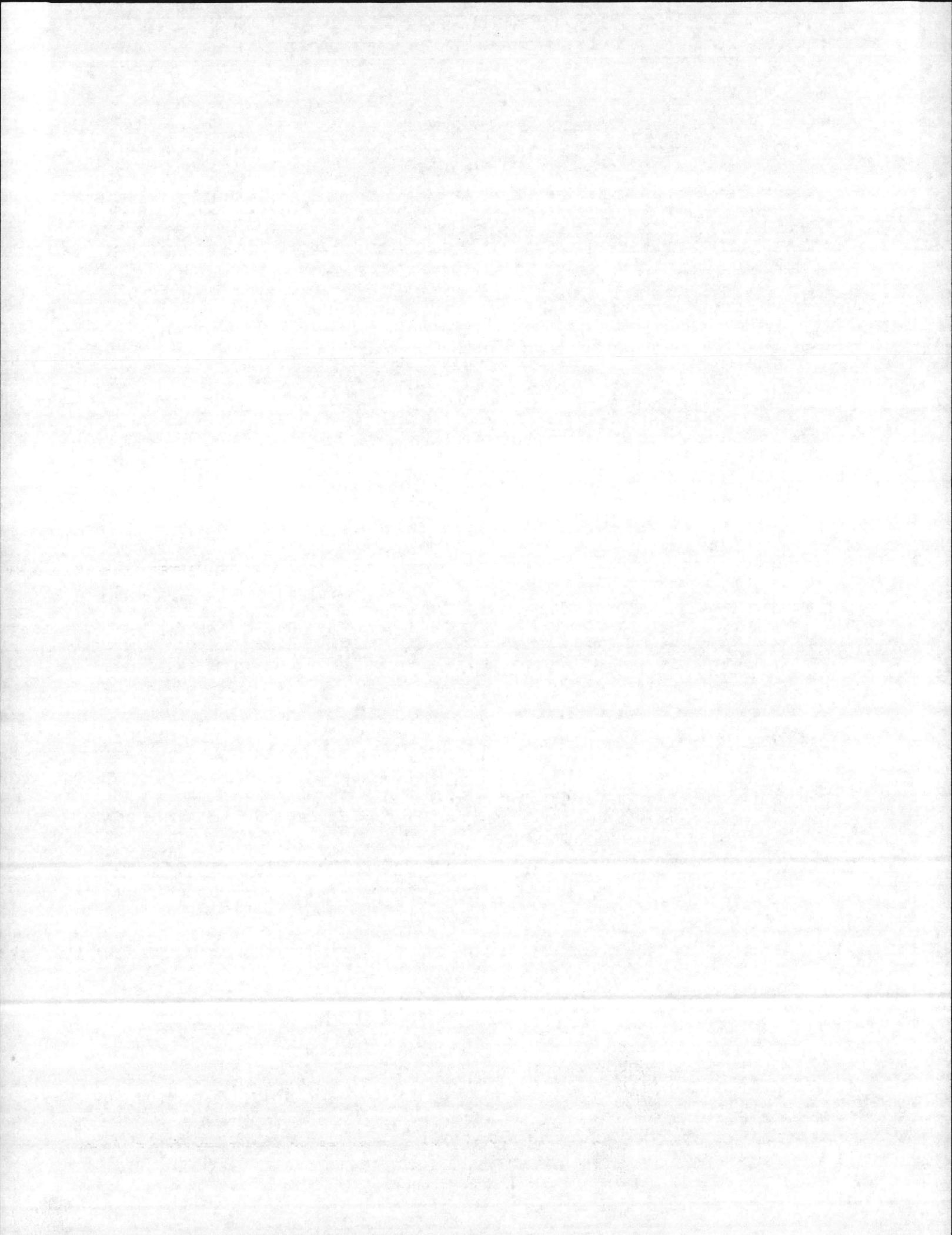
Water valves shall be of the gate type, iron body, bronze mounted, tapered-double disc, with o-rings and conforming to AWWA Specifications C-500, latest edition. Gate valves shall be fabricated from approved materials throughout. The type of joint connection, rising or non-rising stem, packing glands, pressure rating, and other features shall be as outlined on the plans. Such valves shall meet the approval of the owner, and the Engineer.

All water valves shall be installed with an approved valve box, normally flush with pavement or ground. Valve boxes shall be of the screw or slip type, with a base to fit the valve yoke, and removable plug cap with the work "water" cast therein. Valve boxes shall be made from cast iron conforming to ASTM A-48, Class 35C requirements, unless shown otherwise on the plans or specified by the Engineer.

The quantity of gate valves and valve boxes installed and accepted will be measured and paid for at the contract unit price per each, "Gate Valve and Valve Box". Such price and payments will be full compensation for all materials, labor, installation, sanitizing and pressure testing, valve box installation with necessary extension pieces, earth backfilling and other incidentals necessary to complete the work as required.

### CURB STOP AND DRAIN VALVES BOXES AND COVERS:

Curb stop and drain valves shall be installed in accordance with the applicable utility provisions herein and as shown on the utility plans, and as directed



by the Engineer. Stop and drain valves shall be of the wedge type that rotate one way - 90 degrees to cut off flow, and also drain the outlet pipe. Valve boxes and covers shall be cast iron with, handle or wheel connected to rod, that extends down through the valve cover and connected to valve stem.

Stop and drain valves and valve boxes and covers installed in accordance with the plans and utility provisions herein and accepted, will be measured and paid for at the contract unit price per each "Curb Stop and Drain Valve and Covers" of the various sizes as called for herein. Such price and payment will be full compensation for all excavation connecting in, installing valve cover, backfilling and other incidentals necessary to complete the work as required.

#### FIRE HYDRANTS:

Fire hydrants shall be installed in accordance with the applicable utility provisions herein and as shown on the utility plans and as directed by the Engineer. Fire hydrants shall have one 4½ inch pumper connection facing the road, with 2½ inch hose outlets parallel with the road. All hydrants shall conform to AWWA specifications C-502 and the requirements of the Camp Lejeune military base personnel.

Fire hydrants installed in accordance with the plans and utility provisions herein and accepted will be measured and paid for at the contract unit price per each "Furnish and Install Fire Hydrant". Such price and payment will be full compensation for all excavation, reaction backing, connecting to water main, placing stone, backfilling and other incidentals necessary to complete the work as required.

#### SEWER CLEANOUTS:

Sewer cleanouts shall be installed in accordance with the applicable utility provisions herein and as shown on the utility plans, and as directed by the Engineer. Cleanouts shall have screw type covers installed flush with the ground as approved by the Camp Lejeune military base personnel.

Sewer cleanouts installed in accordance with the plans and utility provisions herein and accepted will be measured and paid for at the contract unit price per each "Sewer Cleanouts". Such price and payment will be full compensation for all excavation, Class B Concrete, water tight plugs, backfilling and other incidentals necessary to complete the work as required.

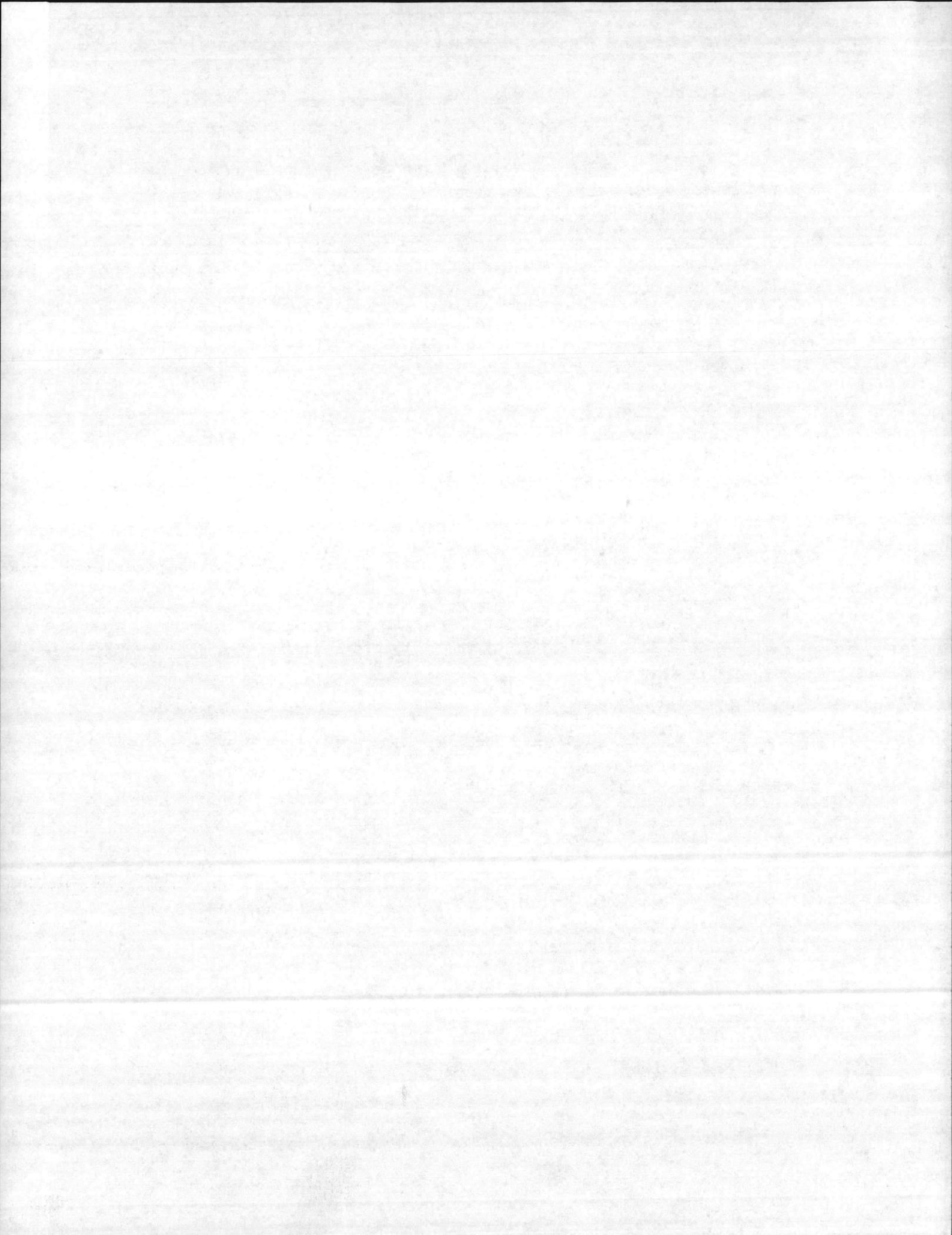
#### REBUILD EXISTING SEWER MANHOLES:

Existing sewer manholes with missing rings and covers and damaged walls shall be rebuilt, with new rings and covers added to conform to state standards, and also requirements and approval of the Camp Lejeune Military Base Personnel.

Manhole brick shall be made from clay or shale in accordance with ASTM C32-63. Brick shall be grade SA or MA, and of standard building size. The brick shall be solid, throughout, red, and hard.

All aggregates used in mortar mix shall conform to ASTM Designation C 398-65, and also NCSHC specifications.

Sewer manhole rings and covers shall be of grey iron castings conforming to ASTM designation A 48-64, class 20. All castings shall be coated in conformance



with ASTM Designation A 74-42.

The quantity of sewer manholes to be rebuilt, and supplied with manhole rings and covers shall be paid for based on a contract lump sum bid price for all damaged sewer manholes, and missing rings and covers. Such prices and payments will be compensation in full for furnishing all labor, material, equipment, rings and covers and other incidentals necessary to complete the work.

ELECTRIC DISTRIBUTION SYSTEM AND FIRE ALARM SYSTEM:

The electric distribution system, and fire alarm system shall conform to all applicable electric codes, the applicable utility provisions herein, and the requirements and approval of the Camp Lejeune Military Base Personnel and as shown on the utility plans.

The electric distribution system and fire alarm system installed in accordance with the plans and utility provisions herein, and accepted, will be paid for on a contract lump sum bid price. Such price and payment will be compensation in full for furnishing all materials, labor, installation, connecting, testing, and other incidentals required to complete the work.



STANDARD SPECIAL PROVISIONSIRREGULAR PROPOSALS

The 1965 Revised Standard Specifications, including Supplement No. 1, are hereby amended as follows:

1. PREQUALIFICATION OF BIDDERS

Page 11 of the 1965 Revised Standard Specifications, Article 2.2. Delete this article in its entirety and substitute the following:

2.2 Prequalification of Bidders

Contractors bidding for the first time or who have not had a contract for one year must file at least ten days prior to the time of receipt of bids an experience questionnaire and confidential financial statement which must be a complete report of the financial resources and liabilities, equipment, past record, personnel of their organization and experience. Contractors intending to consistently submit proposals on State Highway Commission projects shall prequalify at least once a year.

Contractors shall comply with the act to regulate the practice of general contracting as contained in Article 1, General Contractors, Chapter 87, General Statutes of North Carolina. Where the Contractor is not licensed in accordance with this statute and is bidding on projects where no Federal funds are involved, the Contractor's bid will not be accepted and read.

2. PREPARATION OF PROPOSAL

Pages 12 and 13 of the 1965 Revised Standard Specifications, Article 2.6. Delete this Article in its entirety and substitute the following:

2.6 Preparation of Proposal

The unit or lump sum prices bid for the various items shall be written in figures. In the case of lump sum items, the price shall be inserted in the "Amount Bid" column in the proposal. The amount bid for each item other than lump sum items is to be determined by multiplying each unit price bid by the quantity for that item, and is to be written in figures in the "Amount Bid" column in the proposal. The total amount bid shall be determined by adding the amounts bid for each item and shall then be written in figures in the proper place in the proposal.

In case of a discrepancy between the unit price for an item and the amount bid for that item, the unit price shall govern.

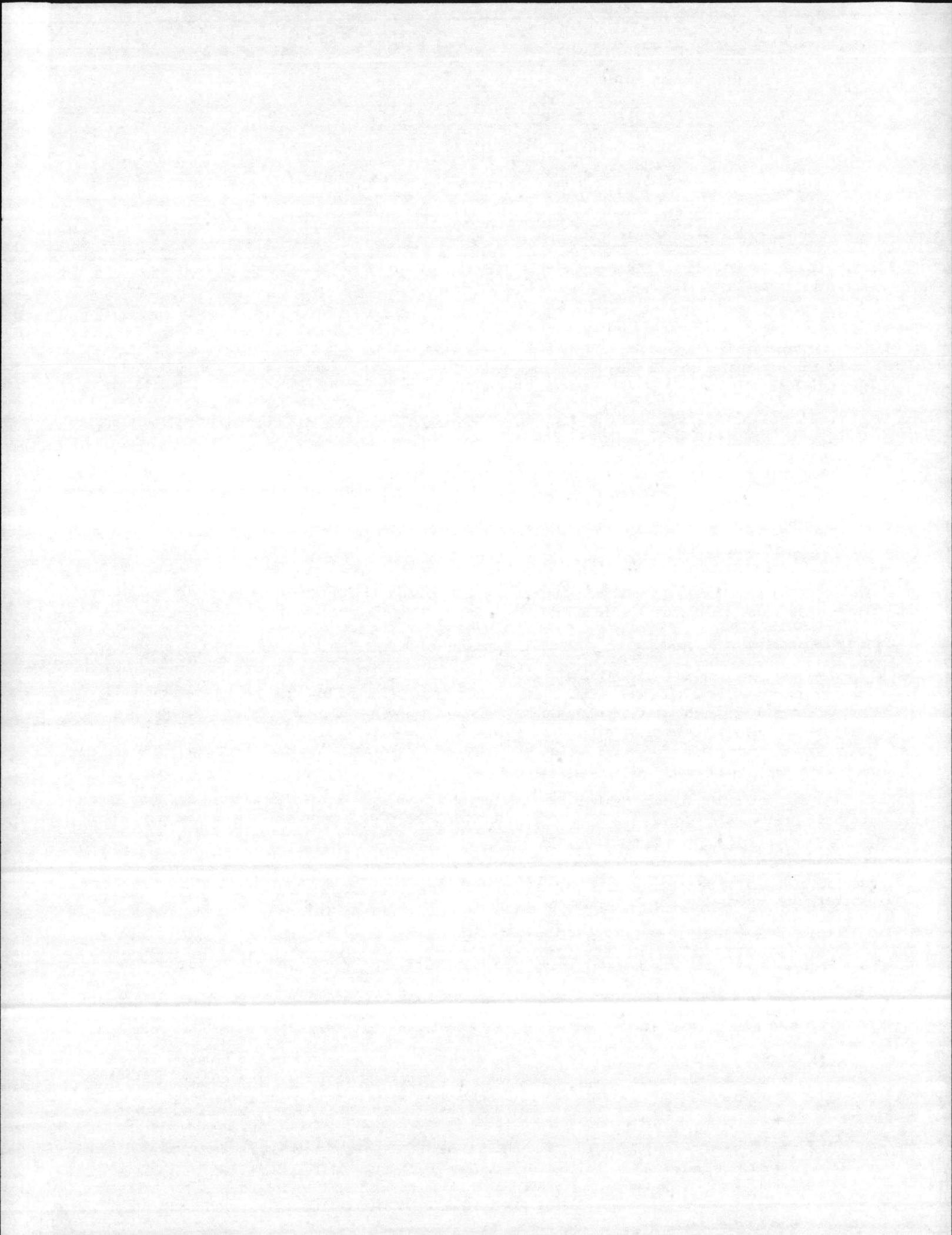
3. IRREGULAR PROPOSALS

Page 13 of the 1965 Revised Standard Specifications, Article 2.7. Delete this article in its entirety and substitute the following:

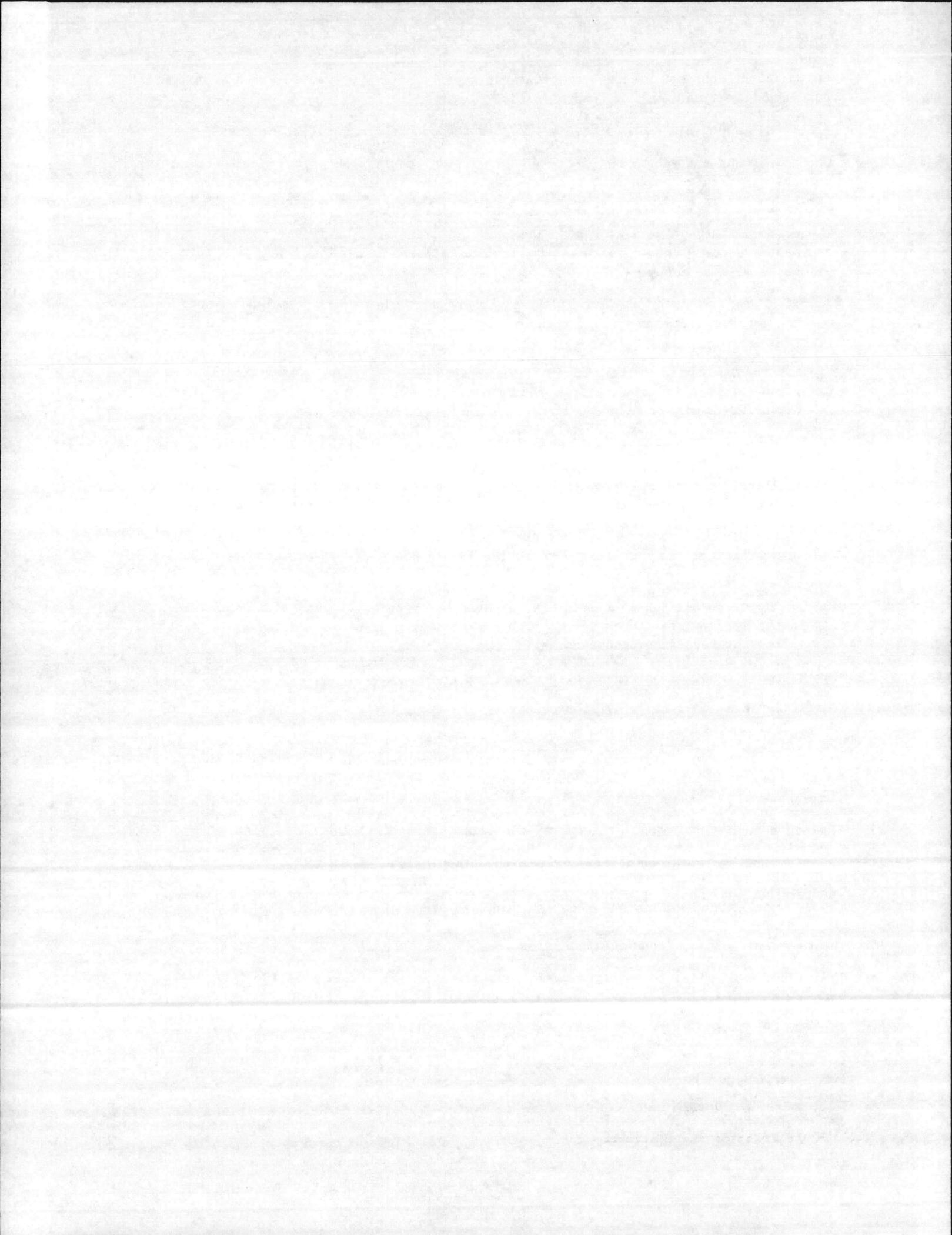
2.7 Irregular proposals

Proposals will be considered irregular and will be rejected for any of the following reasons:

- (a) The proposal form furnished by the Commission has not been used or has been altered.
- (b) Any signature is not in ink, or any other entry has not been written in ink or typed.
- (c) A unit or lump sum price has not been submitted for every item in the proposal other than items which are authorized alternates to those items for which a bid price has been submitted, except that this reason shall not be valid where the proposal permits a Bidder to submit a bid on only a portion of the work covered by the entire proposal.
- (d) The proposal permits a Bidder to submit a bid on only a portion of the work covered by the entire proposal, but a unit or lump sum price has not been submitted for every item constituting that portion of the work on which the Bidder has elected to place a bid other than items which are authorized alternates to those items for which a bid price has been submitted.



- (e) An amount bid has not been entered in the proposal for every item on which a unit price has been submitted.
- (f) The total amount bid has not been written in the proper place in the proposal.
- (g) Changes in any entry have not been made by marking through the entry in ink and making the correct entry adjacent thereto in ink along with the initials in ink of the individual making the entry.
- (h) The proposal has not been properly executed. In order to constitute proper execution, the proposal must be executed in strict compliance with the following. No other forms of execution will be accepted.
  - 1. If a proposal is by an individual, it must show the name and post office address of the individual and must be signed by the individual with the word "Individually" appearing under the signature. If the individual operates under a firm name this must be shown.
  - 2. If the proposal is by a corporation, it must be signed in the name of the corporation by the President or Vice President. It must be attested by the Secretary or Assistant Secretary. The seal of the corporation must be affixed. If the proposal is executed on behalf of a corporation in any other manner than as above, a certified copy of the minutes of the Board of Directors of said corporation authorizing the manner and style of execution and the authority of the person executing must be attached to the proposal. The proposal must show the principal office of the corporation.
  - 3. If the proposal is made by a partnership, it must be executed in the name of the partnership by one of the partners. The post office address of the partnership must also be shown.
  - 4. If the proposal is a joint venture, it must be executed by each of the joint venturers in the appropriate manner set out above. In addition, above the execution by the joint venturers should appear their names.
- (i) The proposal contains any unauthorized additions, conditional bids, or alternate bids.
- (j) The Bidder has added any provision reserving the right to accept or reject an award, or to enter into a contract pursuant to an award.
- (k) The proposal has not been accompanied by a bid bond or equivalent certified check made out in the correct amount, or the bid bond has not been completely or properly filled out in accordance with the requirements of Article 2.8.
- (l) The bid bond has not been submitted on the form furnished by the Commission.
- (m) The bid bond has not been signed by both the principal and the surety.
- (n) The proposal has not been placed in a sealed envelope having the name and address of the Bidder and the project number on the outside of the envelope.
- (o) The proposal has not been received prior to the time specified in the invitation for bids.
- (p) The Bidder has failed to comply with any qualification regulations of the Commission.
- (q) The Bidder has been disqualified from bidding and has not requalified at the time set for receiving bids.
- (r) The proposal is for a project financed without any Federal funds and the Bidder is not licensed in North Carolina.
- (s) There are irregularities of any kind which make the proposal incomplete, indefinite, or ambiguous as to its meaning.



#### 4. PROPOSAL GUARANTY

Pages 13 and 14 of the 1965 Revised Standard Specifications and pages 1 and 2 of Supplement No. 1, Article 2.8. Delete this article in its entirety and substitute the following:

##### 2.8 Proposal Guaranty

No proposal will be considered or accepted unless accompanied by a bid bond executed by a corporate surety licensed under the laws of North Carolina to execute such bonds, conditioned that the Surety will upon demand forthwith make payment to the Commission upon said bond, the amount of five per cent of the Bidder's total bid price if the Bidder fails to execute the contract in accordance with the bid bond.

In lieu of furnishing a bid bond as provided above, the Bidder may submit with his proposal a certified check on a bank or trust company insured by the Federal Deposit Insurance Corporation, in an amount equal to not less than five per cent of the Bidder's total bid price.

The bid bond shall be submitted on the form furnished by the Commission.

#### 5. DELIVERY OF PROPOSAL

Page 14 of the 1965 Revised Standard Specifications. Article 2.9. Delete this article in its entirety and substitute the following:

##### 2.9 Delivery of Proposals

All proposals shall be placed in a sealed envelope having the name and address of the Bidder, the project number, the county or counties in which the project is located, and the statement "Proposal for the Construction of State Highway Project No. ...." on the outside of the envelope. If delivered by mail, the sealed envelope shall be placed in another sealed envelope and the outer envelope addressed to the Chief Engineer's Office, N. C. State Highway Commission, Raleigh, N. C. The outer envelope shall also bear the statement "Proposal for the Construction of State Highway Project No. ...." If delivered in person, the sealed envelope shall be delivered to the Chief Engineer's Office, Highway Building, Raleigh, N. C., except that if it is delivered on the day on which bids are received, it shall be delivered to the place indicated in the invitation for bids. All proposals shall be delivered prior to the time specified in the invitation for bids. Proposals received after such time will be returned to the Bidder unopened.

#### 6. DISQUALIFICATION OF BIDDERS

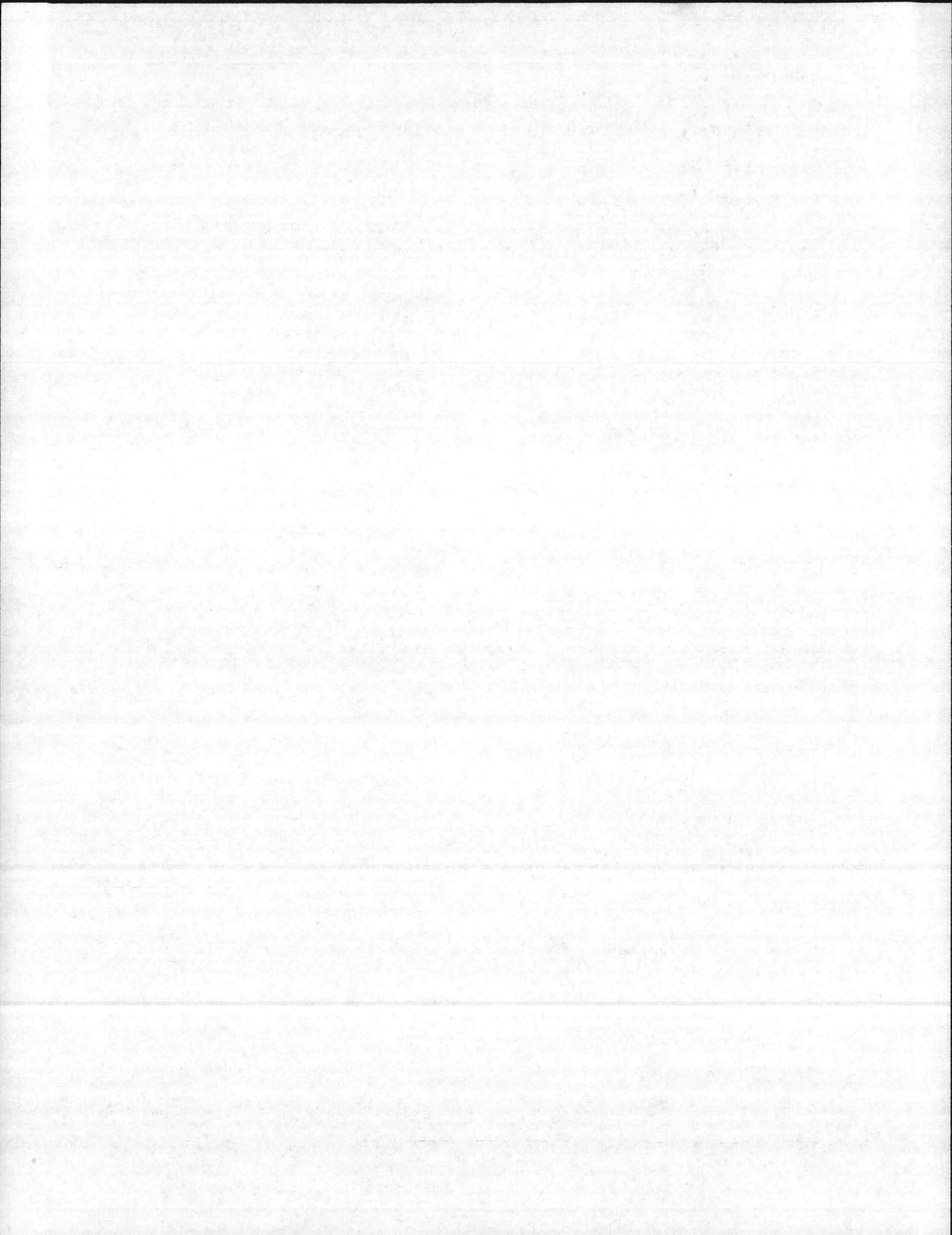
Pages 15 and 16 of the 1965 Revised Standard Specifications and pages 16 and 17 of Supplement No. 1, Article 2.13. Delete this article in its entirety and substitute the following:

##### 2.13 Disqualification of Bidders

Any one or more of the following causes shall disqualify a Contractor from further bidding on any project until he has applied to and has been requalified by action of the full Commission.

- (a) Lack of competency as revealed by the financial statement and experience questionnaire required under Article 2.2.
- (b) Unsatisfactory performance as evidenced by failure to complete within the contract time two concurrent or two consecutive contracts or by default under either Article 8.8 or Subarticle 8.10(A).
- (c) Uncompleted work which, in the judgment of the Commission, might hinder or prevent the prompt completion of additional work if awarded.
- (d) Failure to comply with any qualification regulations of the Commission.

In addition to the above provisions, a Contractor shall be temporarily disqualified from bidding on any project, in accordance with Subarticle 8.10(B), as a consequence of unsatisfactory progress of any contract.



January 1, 1971

STANDARD SPECIAL PROVISIONS

CONTRACT TIME AND PROSECUTION OF WORK

Page 18 of Supplement No. 1, Subarticle 8.2(C). Delete the first sentence of this subarticle and substitute the following:

At least one week prior to the preconstruction conference, the Contractor shall submit to the Division Engineer for his approval at least three copies of a working progress schedule for the project.

Page 20 of Supplement No. 1, Subarticle 8.6(B). Delete the paragraph numbered "2" of this subarticle and substitute the following:

2. In case the total amount of the final estimate minus the total amount of all authorized modifications which have extended the completion date exceeds the original contract estimate, the number of working days indicated in the proposal will be increased by that percentage that such reduced total amount exceeds the original contract estimate.

Page 21 of Supplement No. 1, Subarticle 8.6(C). Delete the paragraph numbered "2" of this subarticle and substitute the following:

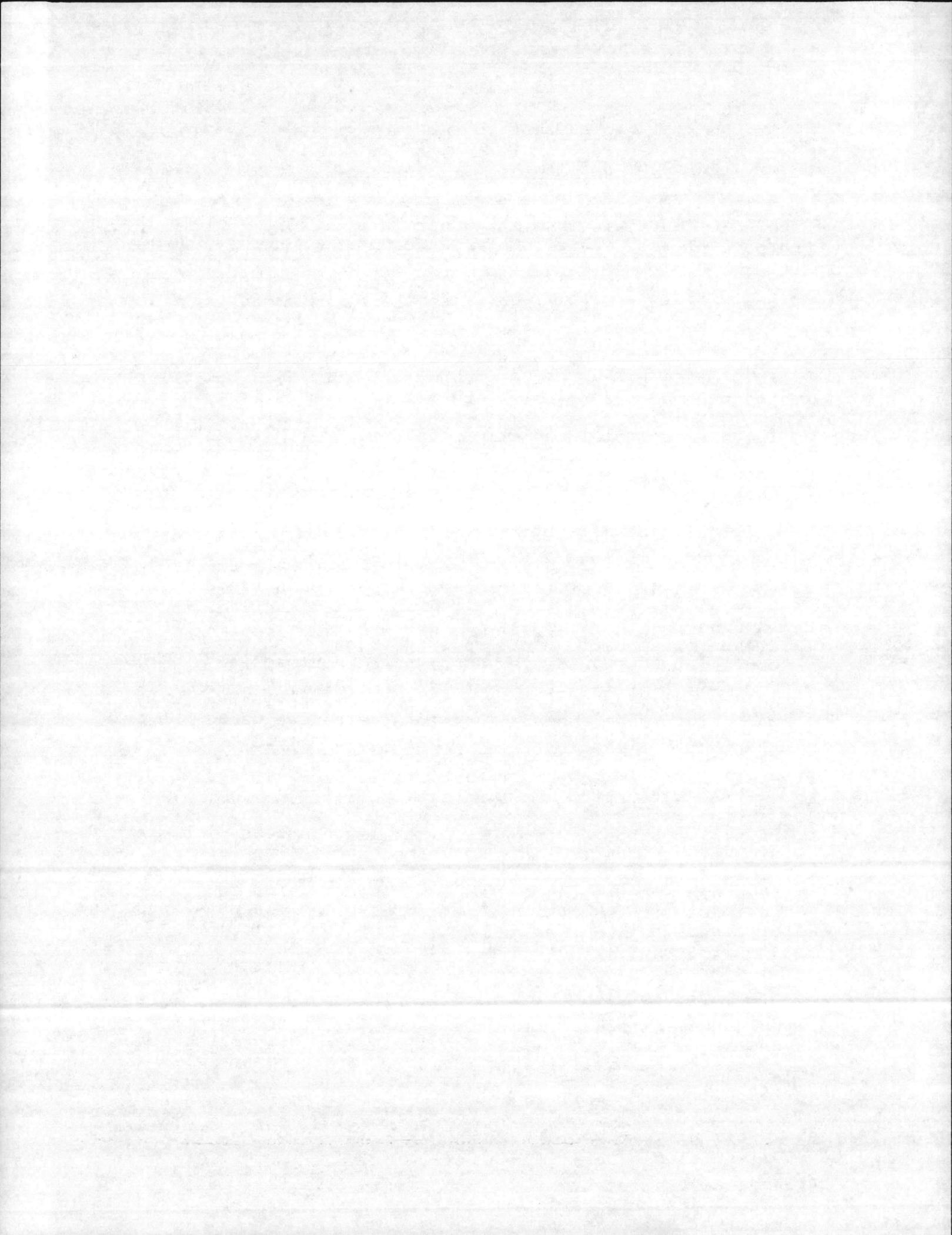
2. In case the total amount of the final estimate minus the total amount of all authorized modifications which have extended the completion date exceeds the original contract estimate, the contract time will be increased and the completion date extended accordingly. The contract time will be increased by that percentage that such reduced total amount exceeds the original contract estimate.

Page 21 of Supplement No. 1, Subarticle 8.6(C). Add the following paragraph numbered "4" to this subarticle.

4. If all work on the project is totally complete with the exception of an item or items on which work is precluded by seasonal limitations set forth in the contract, the Engineer may, if requested in writing by the Contractor, waive the charging of contract time. If allowed, the period of the non-assessment of contract time will be limited to the day following the completion of all non-affected work through the date of expiration of the seasonal limitation or the date the Contractor resumes work, whichever is first. The non-assessment of contract time during the aforesaid period shall not operate to waive any other liquidated damages that may be assessable under the terms of the contract, nor relieve the Contractor of his responsibility for the work in accordance with Article 7.17.

Page 23 of Supplement No. 1, Subarticle 8.10(A). In the seventh and twelfth lines on this page delete the word "twenty-five" and substitute therefor the word "fifty".

Page 24 of Supplement No. 1, Subarticle 8.10(B). In the sixth and twelfth lines on this page delete the word "ten" and substitute therefor the word "twenty".



January 1, 1972

STANDARD SPECIAL PROVISIONS  
CONTRACT BONDS

The 1965 Revised Standard Specifications are revised in that wherever contract bond is shown, it shall be construed to mean "Contract Payment Bond" and "Contract Performance Bond".

Page 4 of the 1965 Revised Standard Specifications, Article 1.16. Delete this article in its entirety and substitute the following:

1.16(A) CONTRACT PERFORMANCE BOND: A bond furnished by the Contractor and his corporate surety guaranteeing the performance of the contract.  
(B) CONTRACT PAYMENT BOND: A bond furnished by the Contractor and his corporate surety securing the payment of those furnishing labor, materials, and supplies for the construction of the project.

Page 17 of the 1965 Revised Standard Specifications, Article 3.5. Delete this article in its entirety and substitute the following:

3.5 CONTRACT BONDS: The successful bidder, at the time of the execution of the contract, shall provide the Commission with a contract payment bond and contract performance bond each in an amount equal to 100 percent of the amount of the contract. The form of bond shall be that provided by the Commission and shall be in compliance with North Carolina General Statute 136-28.3.

The corporate surety furnishing the bonds shall be authorized to do business in the state, and shall be acceptable to the Commission. All contract payment bonds and contract performance bonds shall be countersigned by an agent of the corporate surety who is residing in North Carolina and who is licensed by the North Carolina Department of Insurance.

The successful bidder shall furnish a statement signed by the agent receiving the sales commission from the contract bonds. The statement shall be included with the signed contract when the contract is returned to the Commission, and shall declare that the undersigned agent has received or anticipates receiving the commission from the contract bonds pertaining to the project.

SUPERVISION BY CONTRACTOR

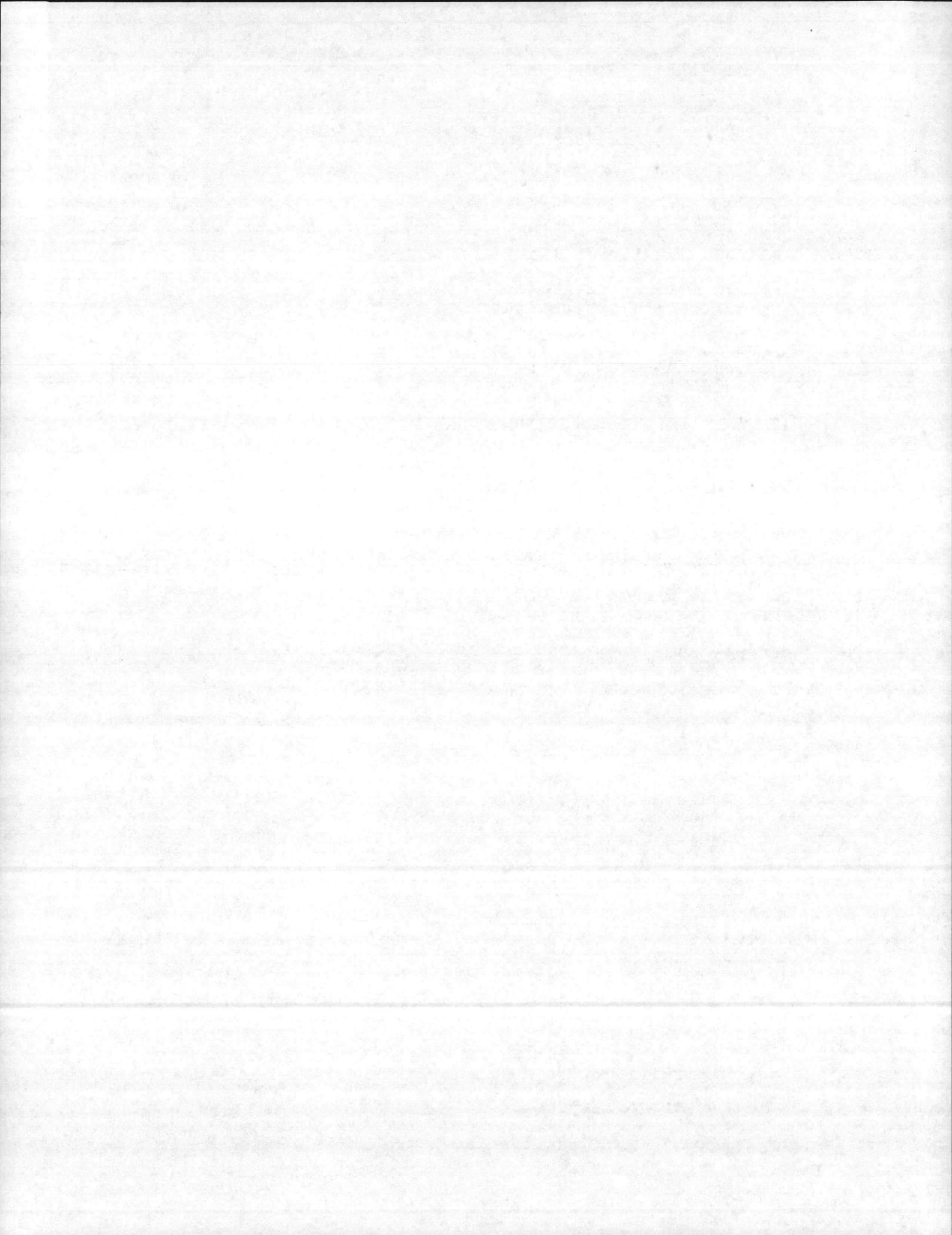
Page 11 of Supplement No. 1, Subarticle 5.5A(A). Delete the last sentence of this subarticle and substitute the following:

He is to be an employee of the Contractor.

SANITARY PROVISIONS

Page 41 of the 1965 Revised Standard Specifications, Article 7.6. Add the following at the end of this article:

The Contractor shall provide adequate sanitation facilities on the project.



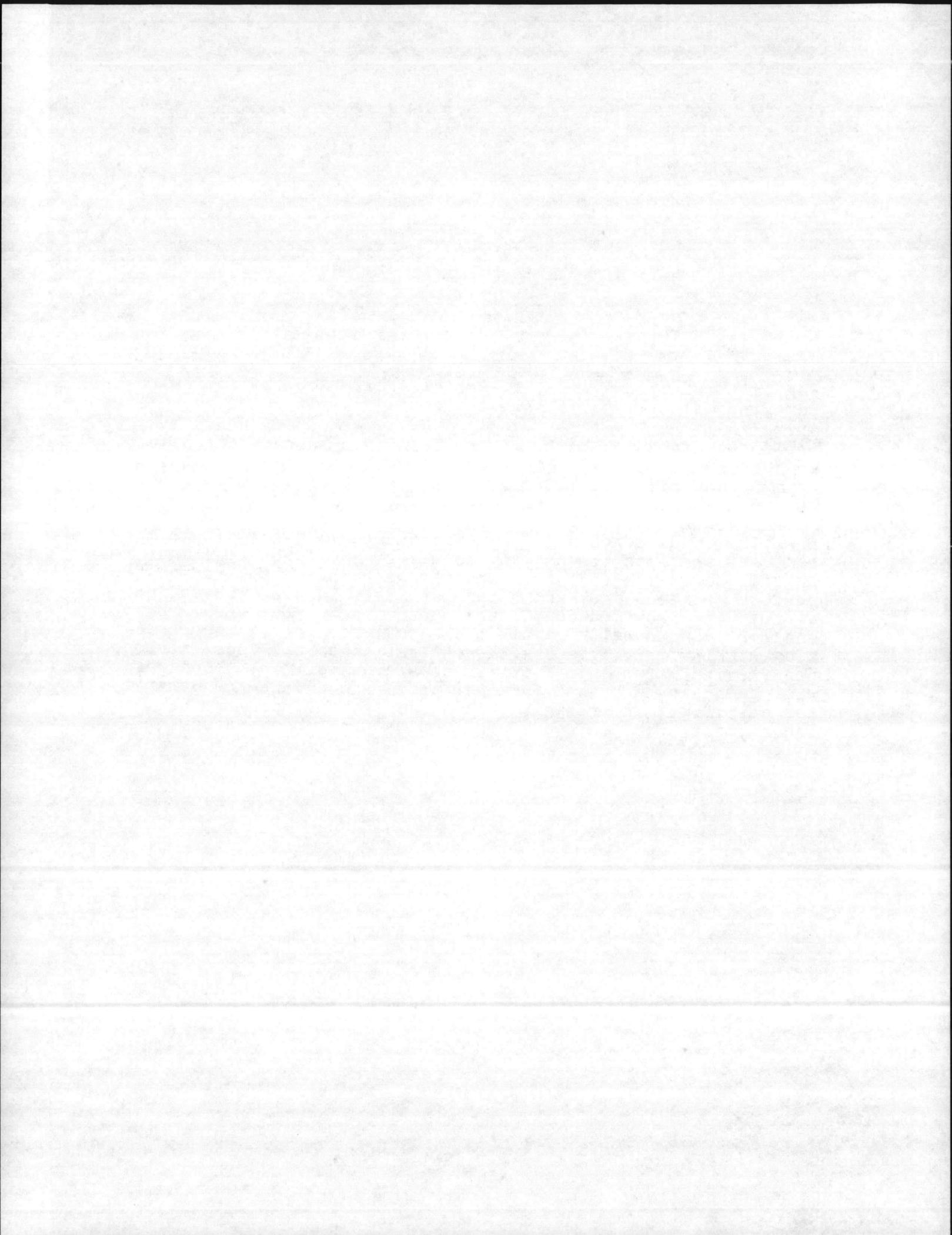
September 1, 1967

STANDARD SPECIAL PROVISIONS

SUBCONTRACTOR'S BOND

Page 14 of Supplement No. 1, Article 8.1. Add the following paragraph at the end of this article:

The Contractor shall require from each subcontractor to whom he may sublet a portion or portions of this contract, a payment and performance bond in the amount of 100 percent of the work sublet to said subcontractor, said bond to be a part of said subcontract. The said payment and performance bond shall be conditioned upon the faithful performance of the subcontract and upon the payment to all persons who have, and fulfill contracts that are directly with the subcontractor for performing labor and furnishing materials in the prosecution of the work provided for in the subcontract. Every such bond shall be construed, regardless of its language, as incorporating within its provisions the obligation to pay those persons who furnish labor and materials as aforesaid. No subcontract will be approved by the Engineer until and unless the Contractor certifies, in writing, that a satisfactory performance and payment bond has been furnished by the subcontractor.



March 1, 1968

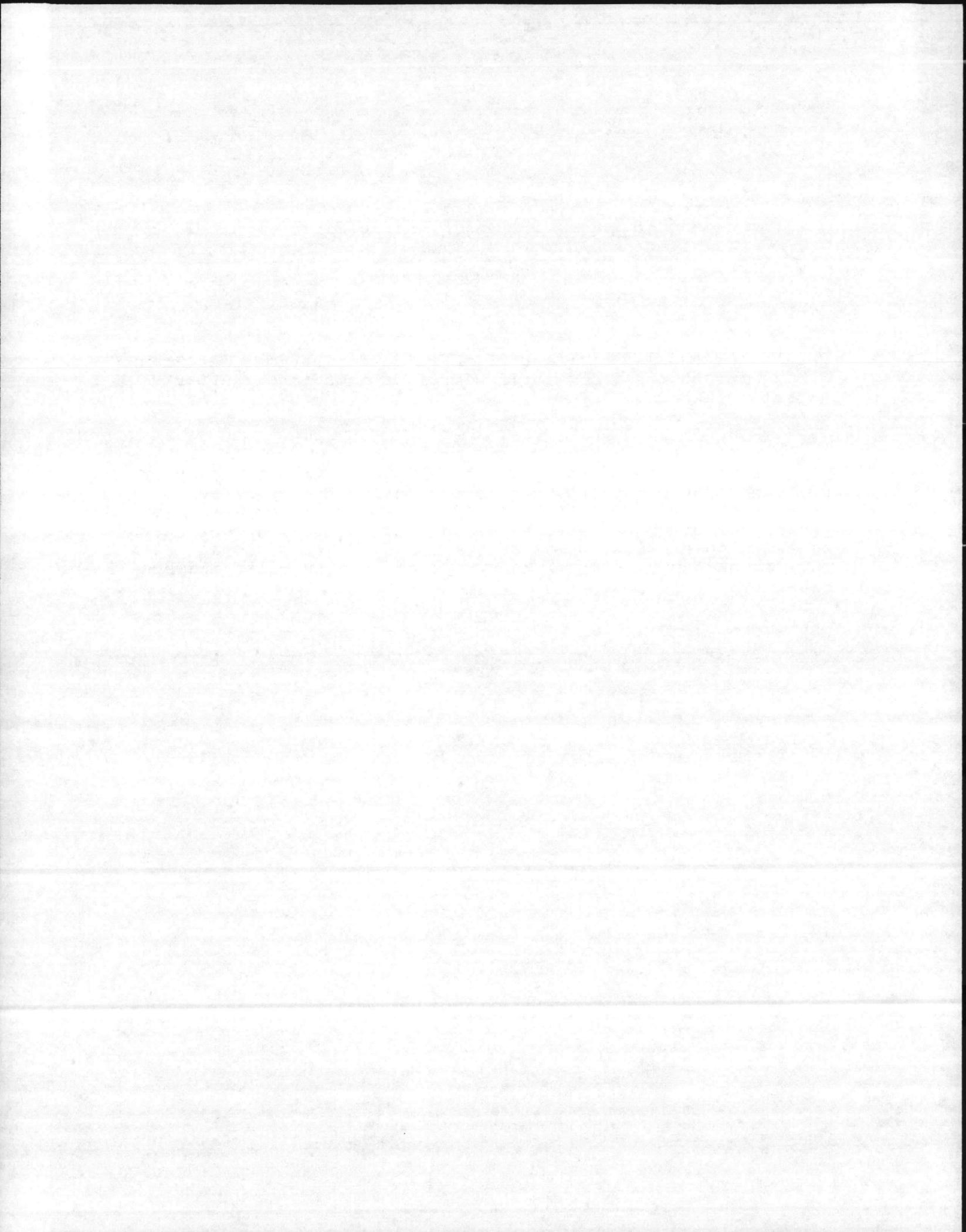
STANDARD SPECIAL PROVISIONS

THIRD PARTY LIABILITY

Page 49 of the 1965 Revised Standard Specifications, Article 7.22. Insert the following new article immediately after Article 7.22:

**7.23 THIRD PARTY LIABILITY**

It is not intended by any of the provisions of any part of these specifications to make the public or any member thereof a third party beneficiary hereunder, or to authorize anyone who is not a party to a contract entered into pursuant to these specifications to maintain a suit for personal injury or property damage otherwise than as authorized and provided for by law.



April 1, 1969

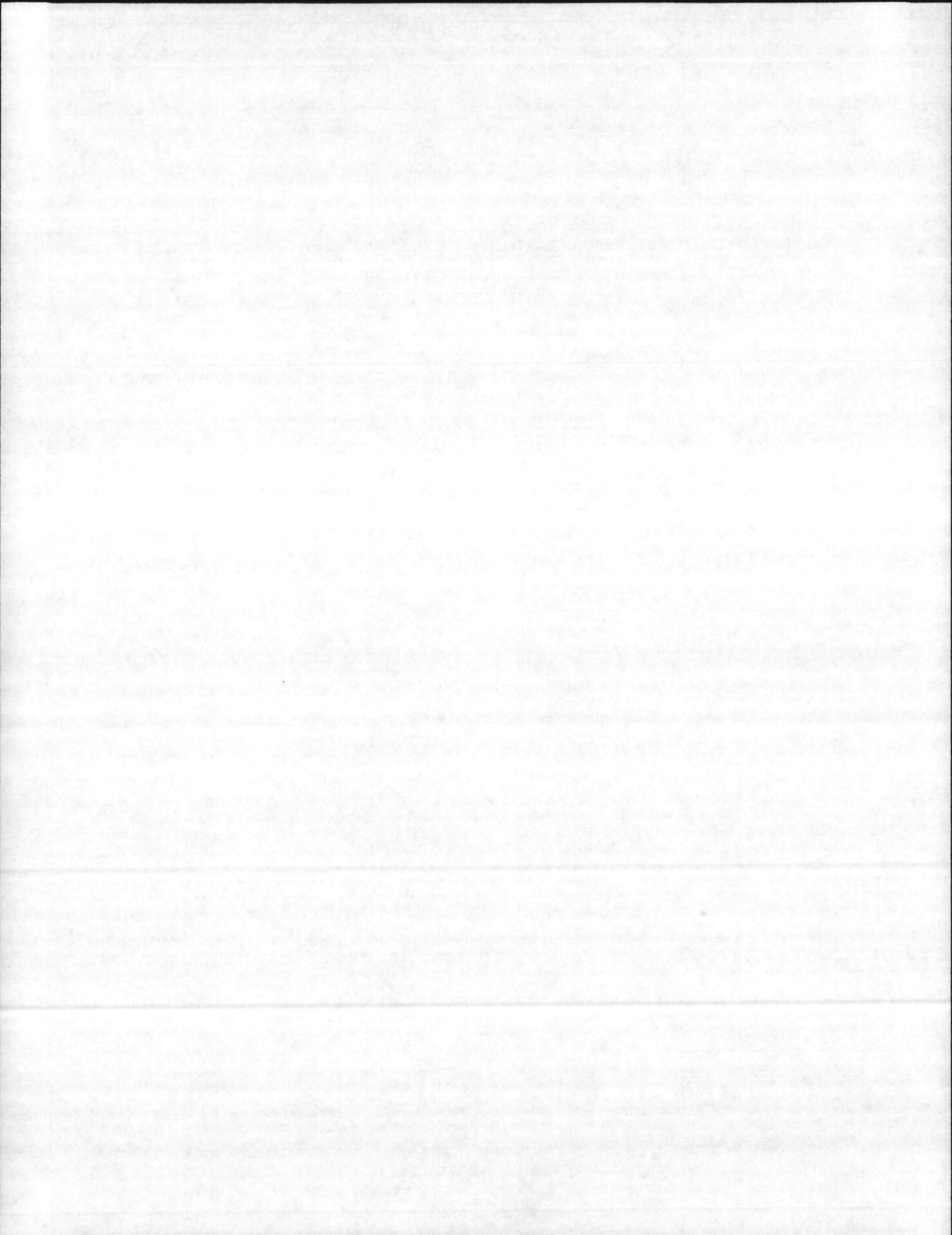
STANDARD SPECIAL PROVISION

SUPPLEMENTAL AGREEMENTS

Page 5 of Supplement No. 1, of the 1965 Revised Standard Specifications, delete Article 4.3C in its entirety and substitute the following:

4.3C Supplemental Agreements

Supplemental agreements will become a part of the contract when approved and properly executed by the Engineer and by the authorized representative of the Contractor. The Contractor will be required to file with the Chief Engineer a copy of the name or names of his representatives who are authorized to sign supplemental agreements.



November 1, 1969

STANDARD SPECIAL PROVISION

TERMINATION CLAUSE - NATIONAL EMERGENCY

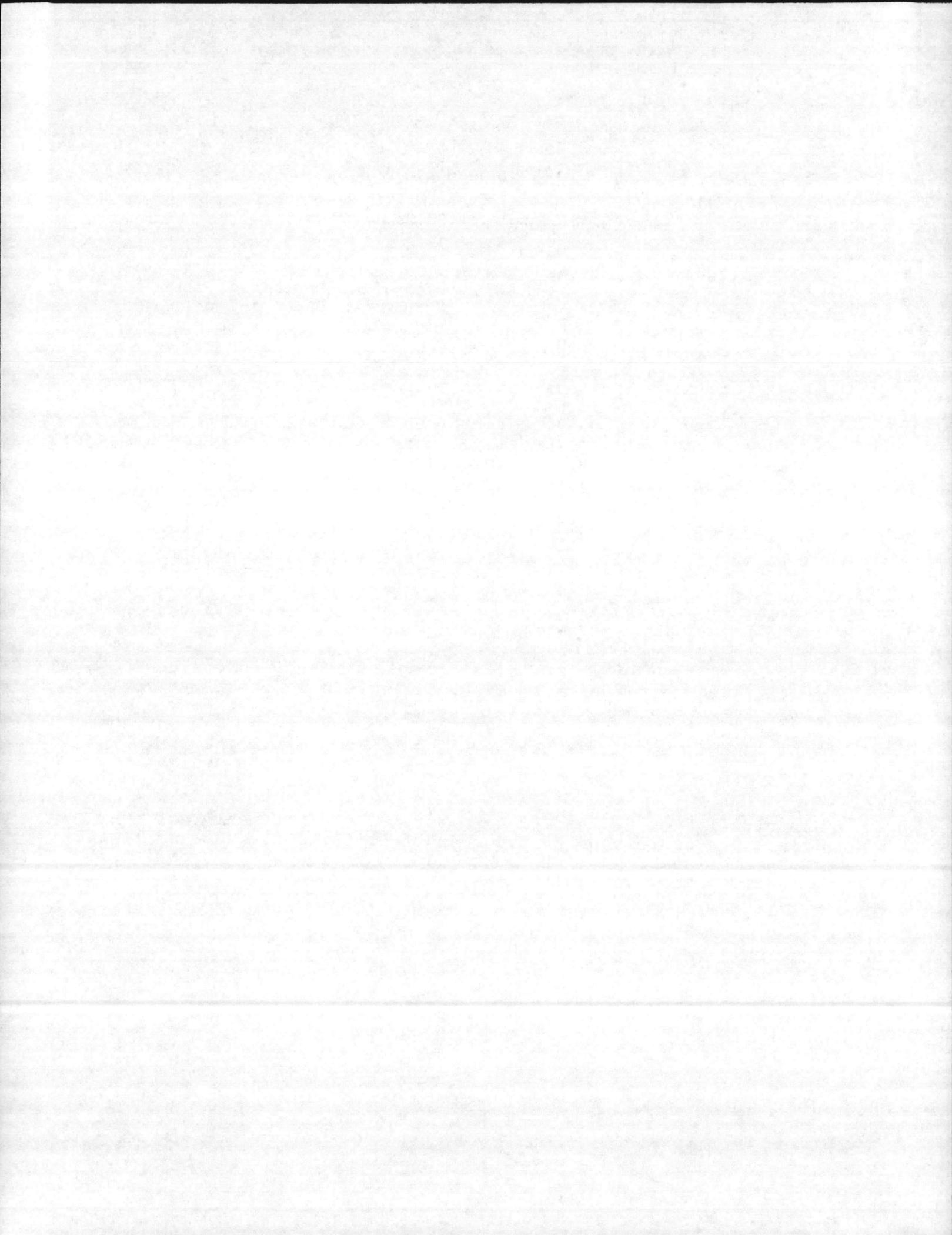
The Engineer may, by written notice, terminate the contract or a portion thereof when the Contractor is prevented from proceeding with the construction contract as a direct result of an Executive Order of the President with respect to the prosecution of war or in the interest of national defence.

When contracts, or any portion thereof, are terminated before completion of all items of work in the contract, payment will be made for the actual number of units or items of work completed at the contract unit price or as mutually agreed for items of work partially completed or not started. No claim for loss of anticipated profits shall be considered.

Reimbursement for organization of the work (when not otherwise included in the contract) and moving equipment to and from the job will be considered where the volume of work completed is too small to compensate the Contractor for these expenses under the contract unit prices, the intent being that an equitable settlement will be made with the Contractor.

Acceptable materials, obtained by the Contractor for the work, that have been inspected, tested and accepted by the Engineer, and that are not incorporated in the work may, at the option of the Engineer, be purchased from the Contractor at actual cost as shown by receipted bills and actual cost records at such points of delivery as may be designated by the Engineer.

Termination of a contract or a portion thereof shall not relieve the Contractor of his responsibilities for the completed work, nor shall it relieve his surety of its obligation for and concerning any just claims arising out of the work performed.



2-1-68

FAIR LABOR STANDARDS ACT:

The Fair Labor Standards Act specifies a minimum wage rate of not less than One Dollar and Sixty Cents (\$1.60) per hour.

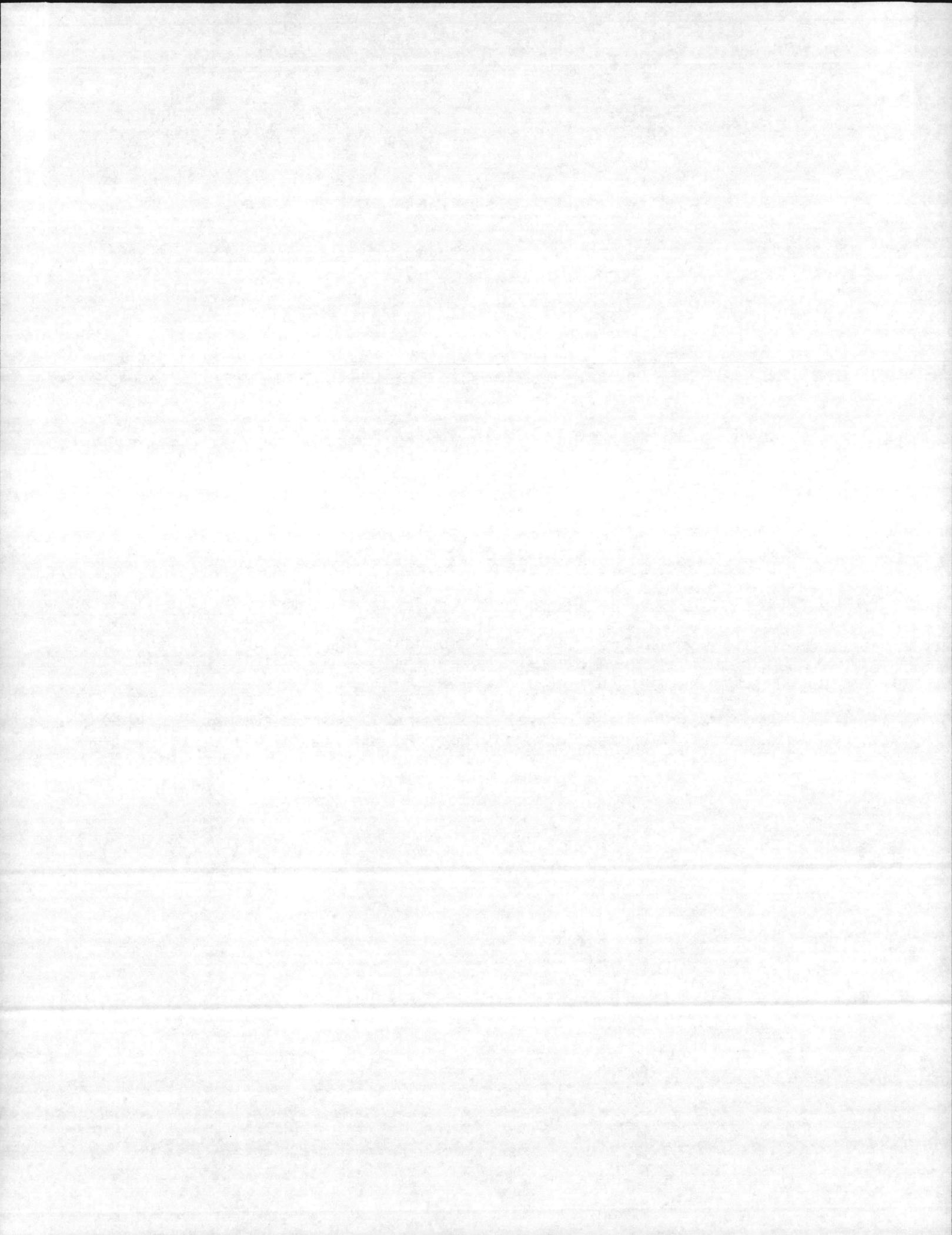
The minimum wage paid to all skilled labor employed on this contract shall be \$1.60 per hour.

The minimum wage paid all intermediate labor employed on this contract shall be \$1.60 per hour.

The minimum wage paid to all unskilled labor on this contract shall be \$1.60 per hour.

The determination of the intent of the application of this act to the contract on this project is the responsibility of the Contractor.

The Contractor shall have no claim against the North Carolina State Highway Commission for any changes in the minimum wage laws, State or Federal. It is the responsibility of the Contractor to keep himself fully informed of all Federal and State Laws effecting his contract.



August 1, 1970

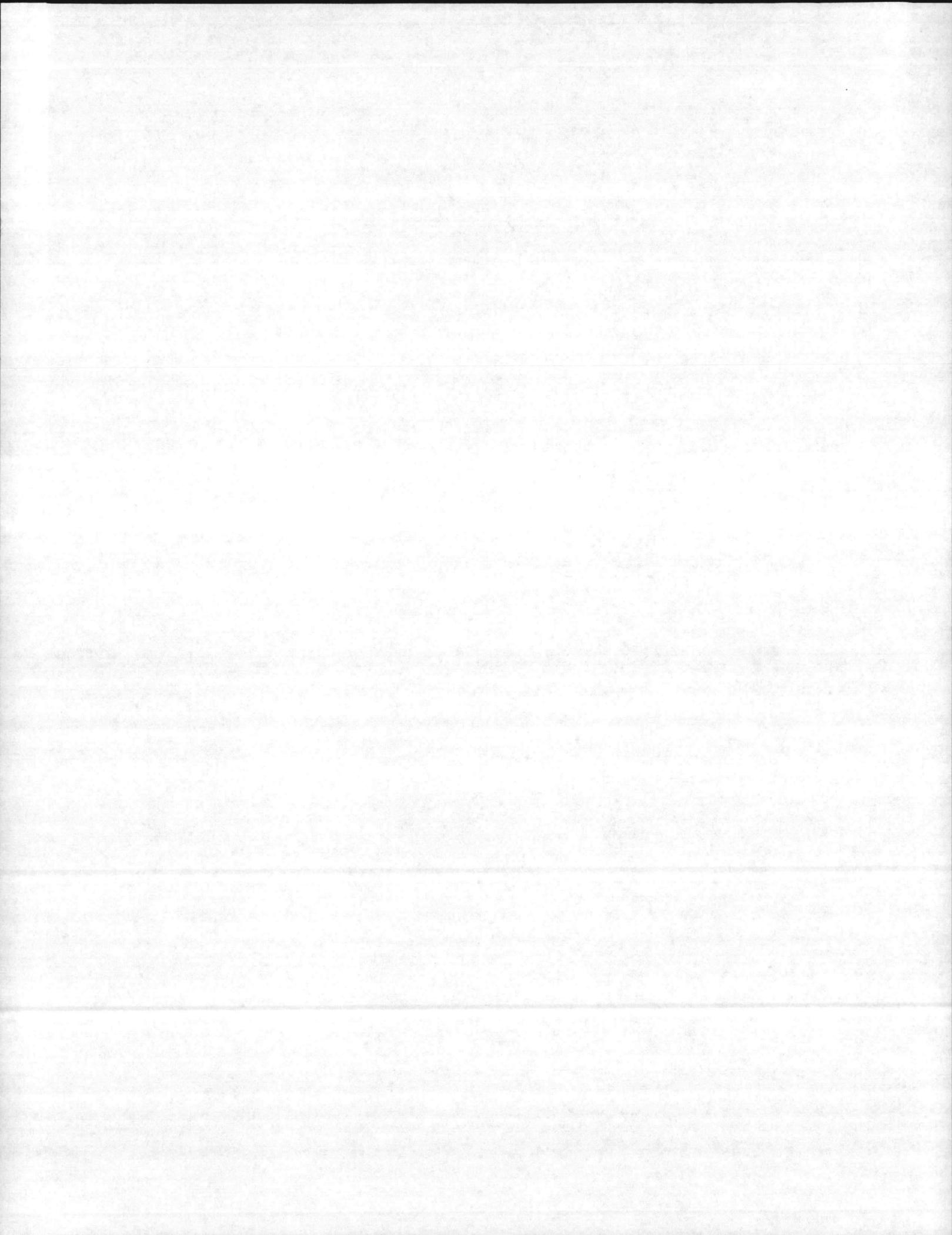
STANDARD SPECIAL PROVISION

RESTRICTION OF LOAD LIMITS

The 1965 Revised Standard Specifications are hereby amended as follows:

Page 32, Article 5.12 - Delete the first paragraph of this article and replace with the following:

All equipment used by the Contractor in the construction of this project shall be subject to the regulations for load limits on highways in accordance with the General Statutes of North Carolina. These regulations shall apply to any equipment that is operated on or over a completed base course, flexible pavement, rigid pavement or structure, regardless of whether it is open to traffic or not.



May 1, 1965

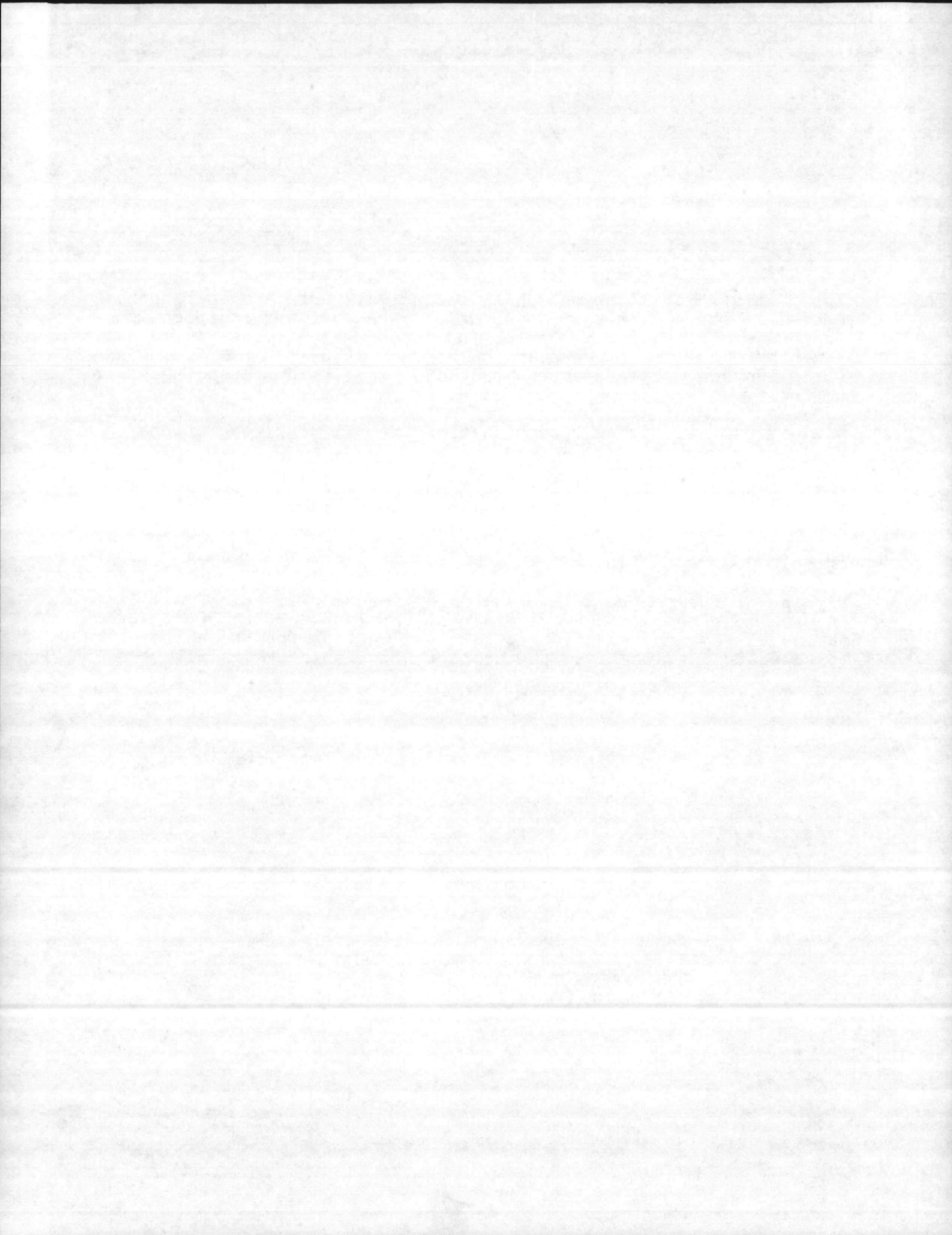
STANDARD SPECIAL PROVISIONS

MOBILIZATION

The item of "Mobilization" shall include all work and operations necessary for the initial movement of personnel and equipment to the project site; for the establishment of all offices, buildings, and other facilities necessary to begin work on the project; and for all other work and operations which must be performed prior to beginning work at the project site. Payment for this item will be made at the contract lump sum price for "Mobilization", which price and payment will be full compensation for all work, operations, and other measures included within the scope of this pay item.

Partial payments for the item of "Mobilization" will be made with the first and second partial pay estimates paid on the contract, and will be made at the rate of 50 percent of the lump sum price at each of these pay estimates, less the retainage provided for in Article 9.6.

Payment of the contract lump sum price for "Mobilization" will not be made more than once, regardless of the fact that the Contractor may have, for any reason, shut down his work on the project or moved equipment away from the project and then back again.

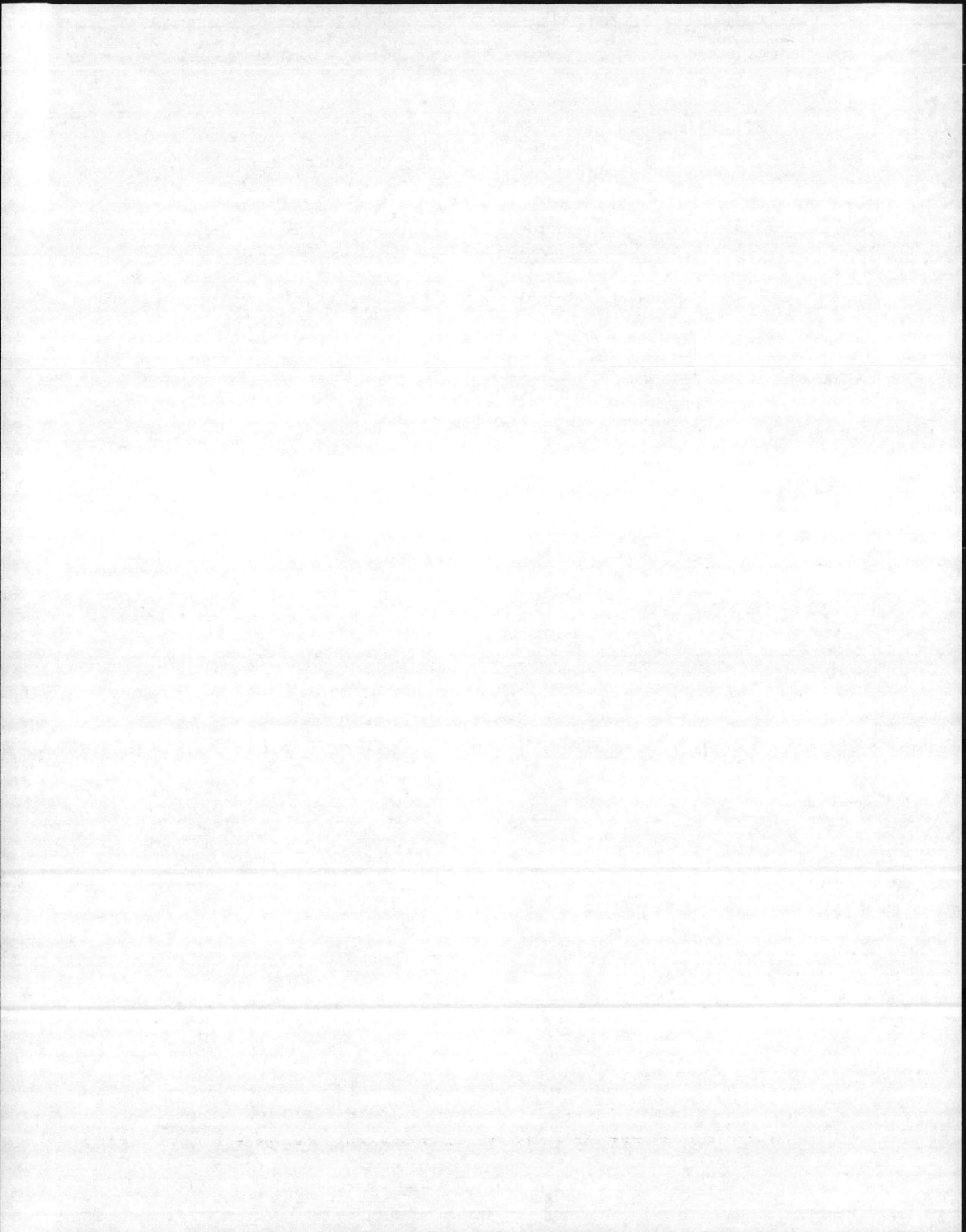


January 2, 1969

STANDARD SPECIAL PROVISION

TESTING OF MATERIALS

The Contractor shall bear the cost of all testing performed on materials ordered by him, but not incorporated into the project.



STANDARD SPECIAL PROVISIONS

July 1, 1971

PROTECTION OF ENVIRONMENT

Pages 44 and 45 of the 1965 Revised Standard Specifications, Article 7.13. Delete this article in its entirety and substitute the following:

**7.13 CONTROL OF EROSION, SILTATION, AND POLLUTION.****(A) General:**

The Contractor shall take whatever measures are necessary to minimize soil erosion and siltation, water pollution, and air pollution caused by his operations. The Contractor shall also comply with the applicable regulations of all legally constituted authorities relating to pollution prevention and control. The Contractor shall keep himself fully informed of all such regulations which in any way affect the conduct of the work, and shall at all times observe and comply with all such regulations. In the event of conflict between such regulations and the requirements of the specifications, the more restrictive requirements shall apply.

The Engineer will limit the area over which clearing and grubbing, excavation, borrow, and embankment operations are performed whenever the Contractor's operations do not make effective use of construction practices and temporary measures which will minimize erosion, or whenever construction operations have not been coordinated to effectively minimize erosion, or whenever permanent erosion control features are not being completed as soon as permitted by construction operations.

**(B) Erosion Control Schedule:**

At or prior to the preconstruction conference, the Contractor shall submit to the Engineer for his approval 3 copies of his erosion control schedule. This schedule shall show the time relationship between phases of the work which must be coordinated to reduce erosion, and shall describe construction practices and temporary erosion control measures which will be used to minimize erosion. The schedule shall also show the Contractor's proposed method of erosion control on haul roads and borrow and material pits, and his plan for disposal of waste materials. No work shall be started until the erosion control schedules and methods of operations have been approved by the Engineer.

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**(C) Erosion and Siltation Control:**

The Contractor shall exercise every reasonable precaution throughout the life of the project to prevent the eroding of soil and the silting of rivers, streams, lakes, reservoirs, other water impoundments, ground surfaces, or other property.

Prior to suspension of operations on the project or any portion thereof, the Contractor shall take all necessary measures to protect the construction area from erosion during the period of suspension.

Unless otherwise approved in writing by the Engineer, construction operations in rivers, streams, and water impoundments shall be restricted to those areas where channel changes are shown on the plans and to those areas which must be entered for the construction or removal of temporary or permanent structures.



Excavated materials shall not be deposited, nor shall earth dikes or other temporary earth structures be constructed, in rivers, streams, or impoundments or so near to such waters that they will be carried into any river, stream, or impoundment by stream flow or surface runoff. As an exception to the above, confined earth materials will be permitted when approved in writing by the Engineer.

Frequent fording of live streams with construction equipment will not be permitted; therefore, temporary bridges or other structures shall be used wherever frequent stream crossings are necessary. Unless otherwise approved in writing by the Engineer, mechanized equipment shall not be operated in live streams except as may be necessary to construct channel changes and to construct or remove temporary or permanent structures.

(D) Coordination of Erosion Control Operations:

Temporary and permanent erosion control measures shall be provided as shown on the plans or as directed by the Engineer. All permanent erosion control work shall be incorporated into the project at the earliest practicable time. Temporary erosion control measures shall be coordinated with permanent erosion control measures and all other work on the project to assure economical, effective, and continuous erosion control throughout the construction and post construction period and to minimize siltation of rivers, streams, lakes, reservoirs, other water impoundments, ground surfaces, or other property.

Temporary erosion control measures shall include but not be limited to the use of temporary berms, dikes, dams, drainage ditches, silt basins, silt ditches, slope drains, structures, vegetation, mulches, mats, netting, gravel, or any other methods or devices that are necessary. Temporary erosion control measures may include work outside the right of way or construction limits where such work is necessary as a result of construction such as borrow or material pit operations, haul roads, plant sites, equipment storage sites, and disposal of waste or debris.

Materials for temporary erosion control measures shall have been approved by the Engineer before being used or shall be as directed by the Engineer.

Erosion control measures installed by the Contractor shall be acceptably maintained by the Contractor.

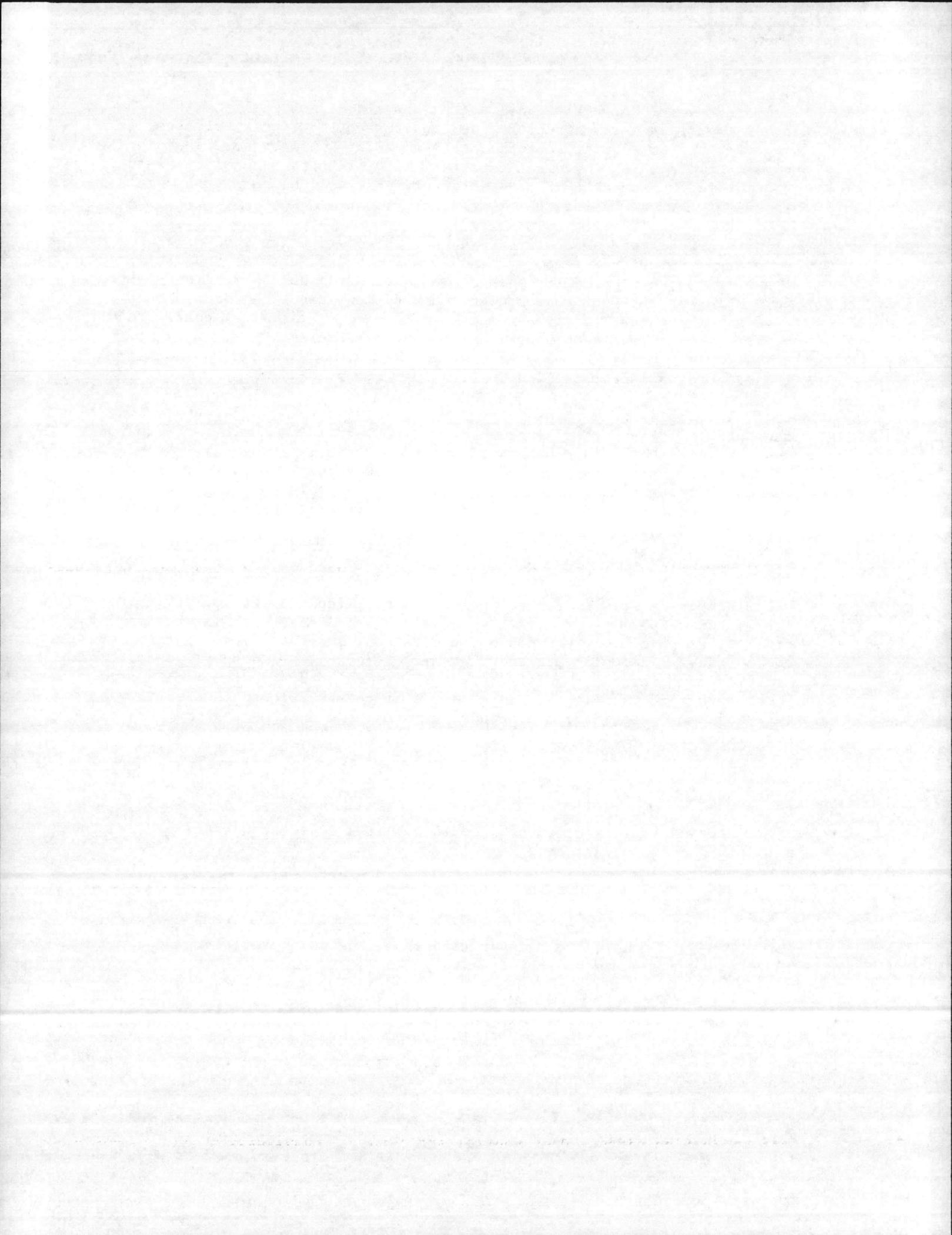
02

(E) Coordination of Grading Operations:

All clearing and grubbing, excavation, borrow, embankment, ditch construction, and other grading operations shall be so coordinated and performed as to cause a minimum of soil erosion.

Clearing and grubbing operations shall be so scheduled and performed that grading operations and permanent erosion control structures and features can follow immediately thereafter if project conditions permit. The Contractor may be required to perform temporary erosion control measures between successive construction stages.

Clearing and grubbing shall be coordinated with other operations such that, unless otherwise increased or decreased by the Engineer, no more than 17 acres of exposed, erodible surface area will be accumulated at any one given time by the clearing and grubbing operation. The Contractor shall perform such erosion control measures, temporary or permanent, as may be directed



by the Engineer in order to satisfactorily minimize erosion resulting from clearing and grubbing operations. Failure on the part of the Contractor to perform the required erosion control measures will be just cause for the Engineer to direct the suspension of clearing and grubbing operations in accordance with Article 8.5 of the Standard Specifications. The suspension will be in effect until such time as the Contractor has satisfactorily performed the required erosion control work.

The Contractor shall perform excavation, borrow, and embankment operations in such a manner that cut and fill slopes will be completed to final slopes and grade in a continuous operation. The operation of removing excavation material from any cut and the placement of embankment in any fill shall be a continuous operation to completion unless otherwise permitted by the Engineer. The excavation, borrow, and embankment operations will not be allowed to accumulate exposed, erodible area in excess of 17 acres at any one given time without the Contractor's beginning permanent seeding and mulching or other erosion control measures. This exposed area shall at all times, unless otherwise increased or decreased by the Engineer, be kept less than 17 acres. Failure on the part of the Contractor to comply with these provisions will be grounds for suspension of the work in accordance with Article 8.5 of the Standard Specifications. The suspension will be in effect until such time as the Contractor has satisfactorily performed erosion control measures.

If grading operations are suspended for any reason whatsoever, partially completed cut and fill slopes shall be brought to the required slope and the work of seeding and mulching or other required erosion control operations shall be performed.

During construction and until final acceptance the Contractor shall maintain the work by shaping to provide for the drainage of surface runoff along and throughout the length of the project, by constructing temporary ditches, and by using any other methods necessary to maintain the work covered by this article so that the work will not contribute to excessive soil erosion.

(F) Water and Air Pollution:

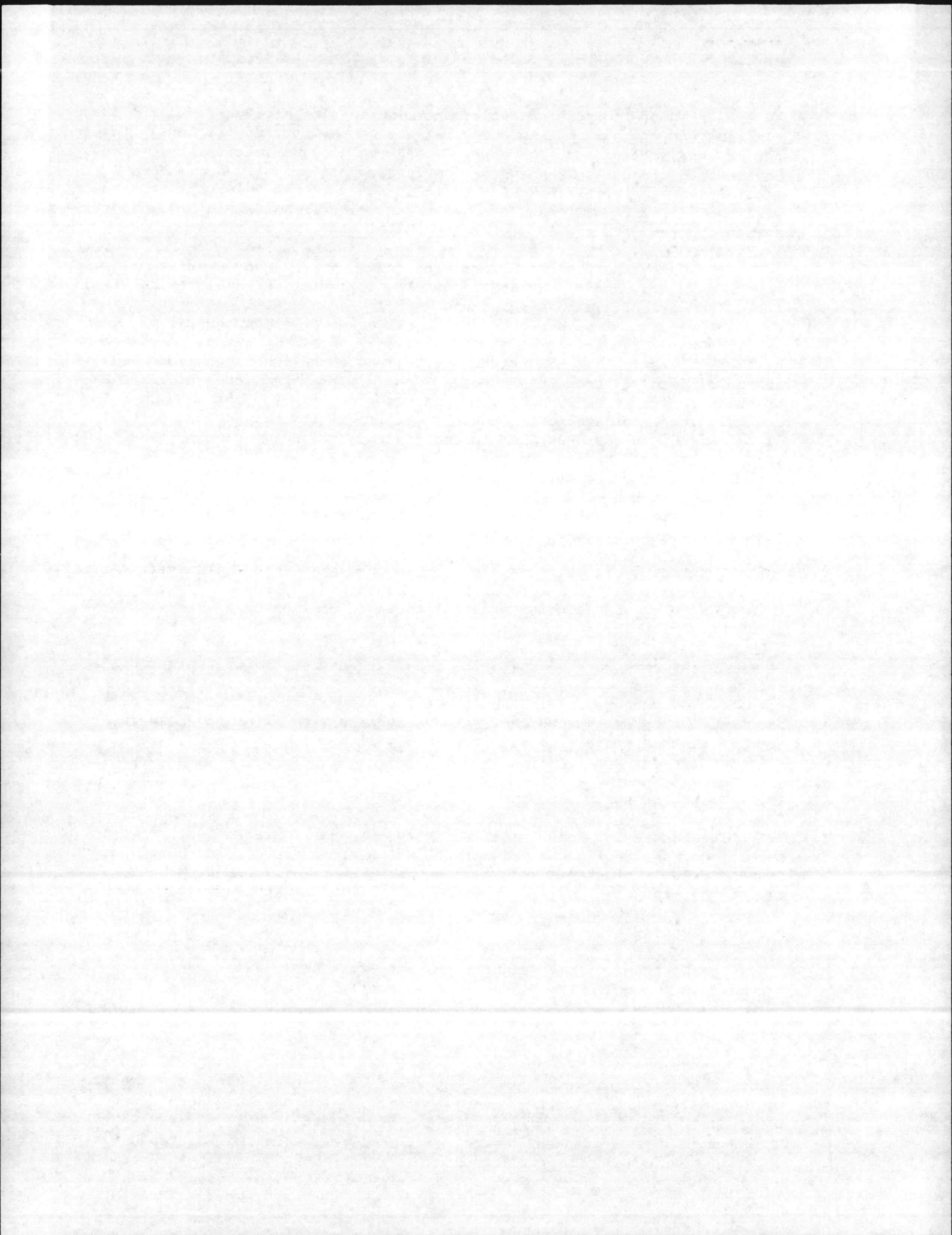
The Contractor shall exercise every reasonable precaution throughout the life of the project to prevent pollution of rivers, streams, and water impoundments. Pollutants such as chemicals, fuels, lubricants, bitumens, raw sewage, and other harmful waste shall not be discharged into or alongside of rivers, streams, or impoundments, or into natural or man-made channels leading thereto.

The Contractor shall comply with all State or local air pollution regulations throughout the life of the project.

03

(G) Dust Control:

The Contractor shall control dust throughout the life of the project within the project area and at all other areas affected by the construction of the project, including, but not specifically limited to, unpaved secondary roads, haul roads, access roads, disposal sites, borrow and material pits, and production sites. Dust control shall not be considered effective where the amount of dust creates a potential or actual unsafe condition, public nuisance, or condition endangering the value, utility, or appearance of any property.



(H) Protection of Public Lands:

In the execution of any work within or adjacent to any State or National forest, park, or other public lands, the Contractor shall comply with all regulations of all authorities having jurisdiction over such forest, park, or lands, governing the protection of public lands and the carrying out of work within public lands, and shall observe all sanitary laws and regulations with respect to the performance of work in public lands. He shall keep the areas in an orderly condition, dispose of all refuse, and obtain permits for the construction and maintenance of all construction camps, stores, warehouses, residences, latrines, cesspools, septic tanks, and other structures in accordance with the requirements of the appropriate authorities.

The Contractor shall take all reasonable precaution to prevent and suppress forest fires and shall require his employees and Subcontractors, both independently and at the request of forest officials, to do all reasonable within their power to prevent and suppress and to assist in preventing and suppressing forest fires and to make every possible effort to notify a forest official at the earliest possible moment of the location and extent of any fire seen by them and to extinguish the same if nearby and practicable.

The Contractor shall obtain any construction permits which may be required for his operations, which are not a part of the project, in accordance with the requirements of the regulations of the appropriate authorities.

04

(I) Application of Specifications:

The provisions of this article shall apply to all construction operations. Further references and detailed requirements concerning erosion, siltation, and pollution prevention and control are given in the plans and/or special provisions as supplements to the general requirements of this article.

(J) Sanctions:

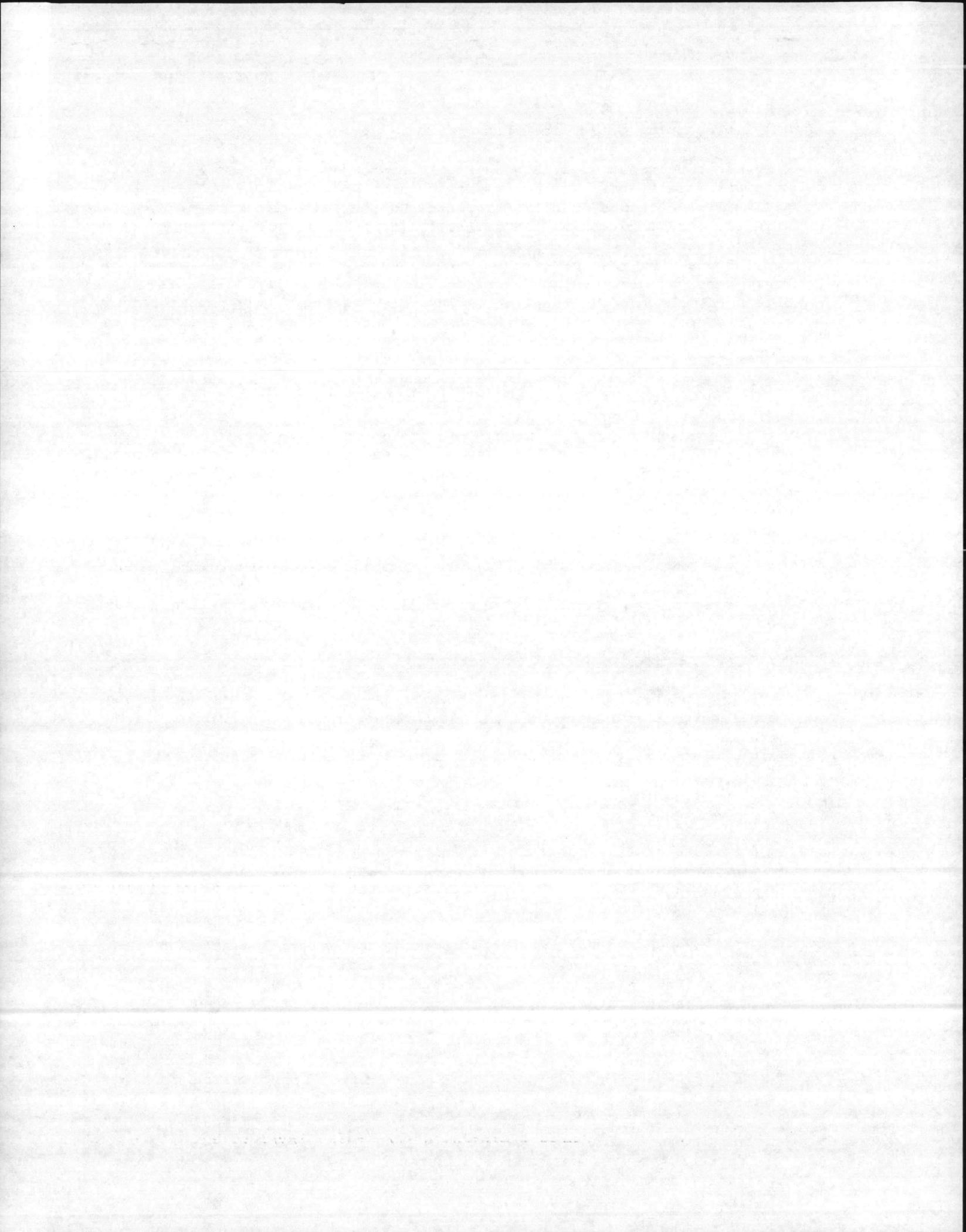
Failure of the Contractor to fulfill any of the requirements of this article may result in the Engineer ordering the stopping of construction operations in accordance with Article 8.5 of the Standard Specifications, until such failure has been corrected.

Failure on the part of the Contractor to perform the necessary measures to control erosion, siltation, and pollution will result in the Engineer notifying the Contractor to take such measures. In the event that the Contractor fails to perform such measures within 24 hours after receipt of such notice, the Engineer may suspend the work as provided above, or may proceed to have such measures performed with Commission forces and equipment, or both. The cost of such work performed by Commission forces will be deducted from monies due the Contractor on his contract.

05

(K) Payment:

Payment for erosion control measures shall be made as provided for by the various contract items or as provided in Article 4.4 of the Standard Specifications, for extra work.



Payment will not be made for the construction of erosion control measures which have been made necessary because of the Contractor's negligence, carelessness, or failure to efficiently schedule and coordinate the work, or which have been constructed solely for the Contractor's convenience. Unless otherwise provided by a pay item, maintaining the work in a manner which will minimize soil erosion and siltation and maintaining temporary and permanent erosion control measures will be considered to be incidental work. Payment will not be made for the construction of erosion control measures beyond the right of way or construction limits, whichever is further, except for seeding and mulching of borrow or material pits and of waste or disposal areas. No direct payment will be made for the control of dust but the cost of same shall be included in the unit prices bid on the various items in the contract.

06

Page 431 of the 1965 Revised Standard Specifications, Section 328. Insert the following section after Section 328:

## SECTION 330

## DISPOSAL OF WASTE AND DEBRIS

## 330-1 DESCRIPTION.

The work covered by this section consists of the disposal of waste and debris in accordance with the requirements of these specifications. Waste will be considered to be all excavated materials which are not utilized in the construction of the project. Debris will be considered to be all undesirable material encountered on the project other than waste or vegetative material resulting from clearing and grubbing operations.

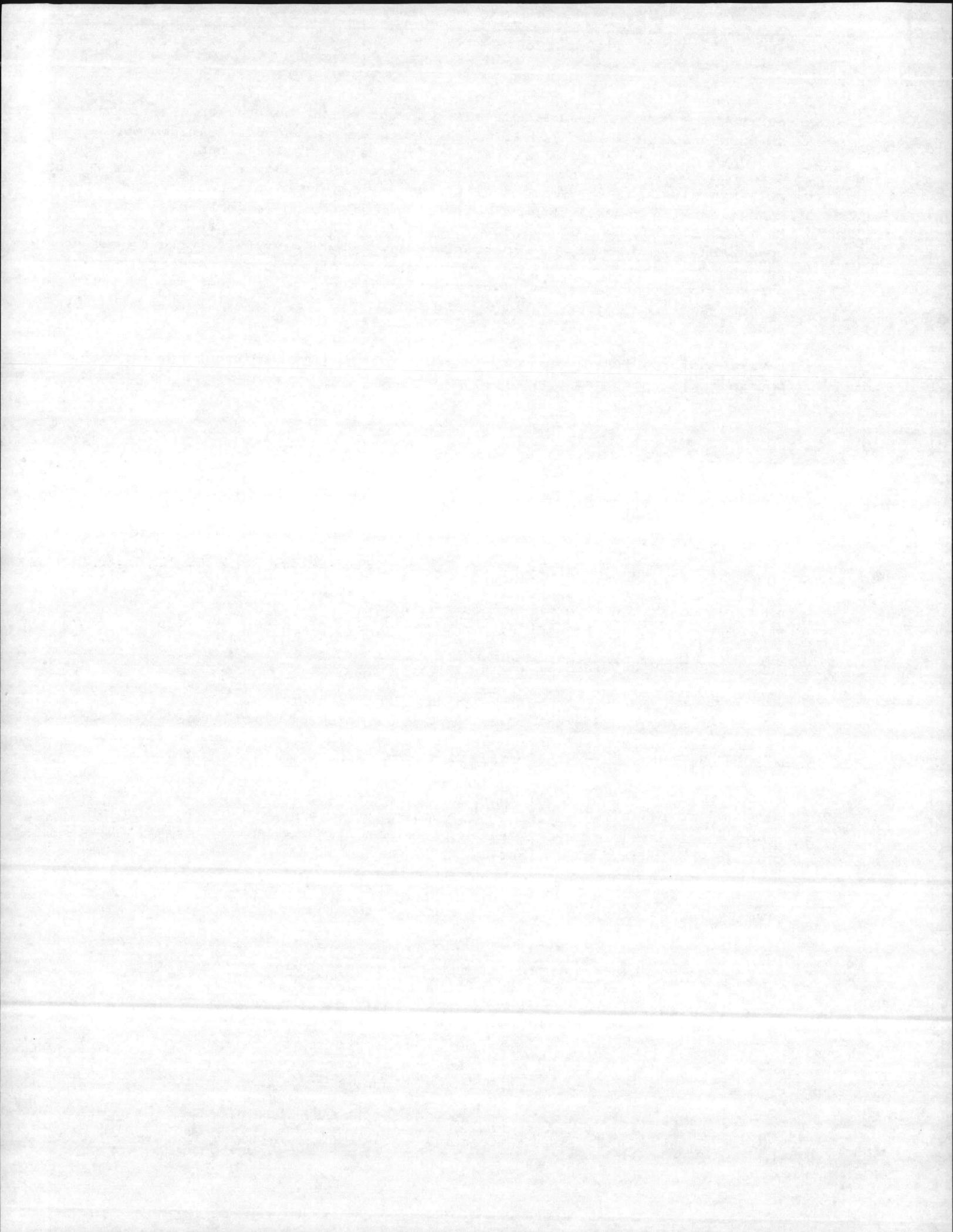
## 330-2 GENERAL REQUIREMENTS.

Waste and debris shall be disposed of in areas that are outside of the right of way and provided by the Contractor, unless otherwise required by the plans or special provisions or unless disposal within the right of way is permitted by the Engineer.

The Contractor shall maintain the earth surfaces of all waste areas, both during the work and until the completion of all seeding and mulching or other erosion control measures specified, in a manner which will effectively control erosion and siltation.

The following requirements shall also be applicable to all waste or disposal areas other than active public waste or disposal areas:

1. Rock waste shall be shaped to contours which are comparable to and blend in with the adjacent topography where practical, and shall be covered with a minimum 6 inch thick layer of earth material either from project waste or from borrow.
2. Earth waste shall be shaped to contours which are comparable to and blend in with the adjacent topography where practical, but in no case will slopes steeper than 2:1 be permitted.
3. Construction debris, and all broken pavement and masonry, shall be covered with a minimum 6 inch thick layer of earth waste



material from the project or borrow. The completed waste area shall be shaped as required above for disposal of earth waste.

4. Seeding and mulching shall be performed over all earth or earth covered waste areas. The work of seeding and mulching shall be performed in accordance with Section 350.
5. Where the Engineer has granted permission to dispose of waste and debris within the right of way, the Engineer will have the authority to establish whatever additional requirements may be necessary to insure the satisfactory appearance of the completed project.

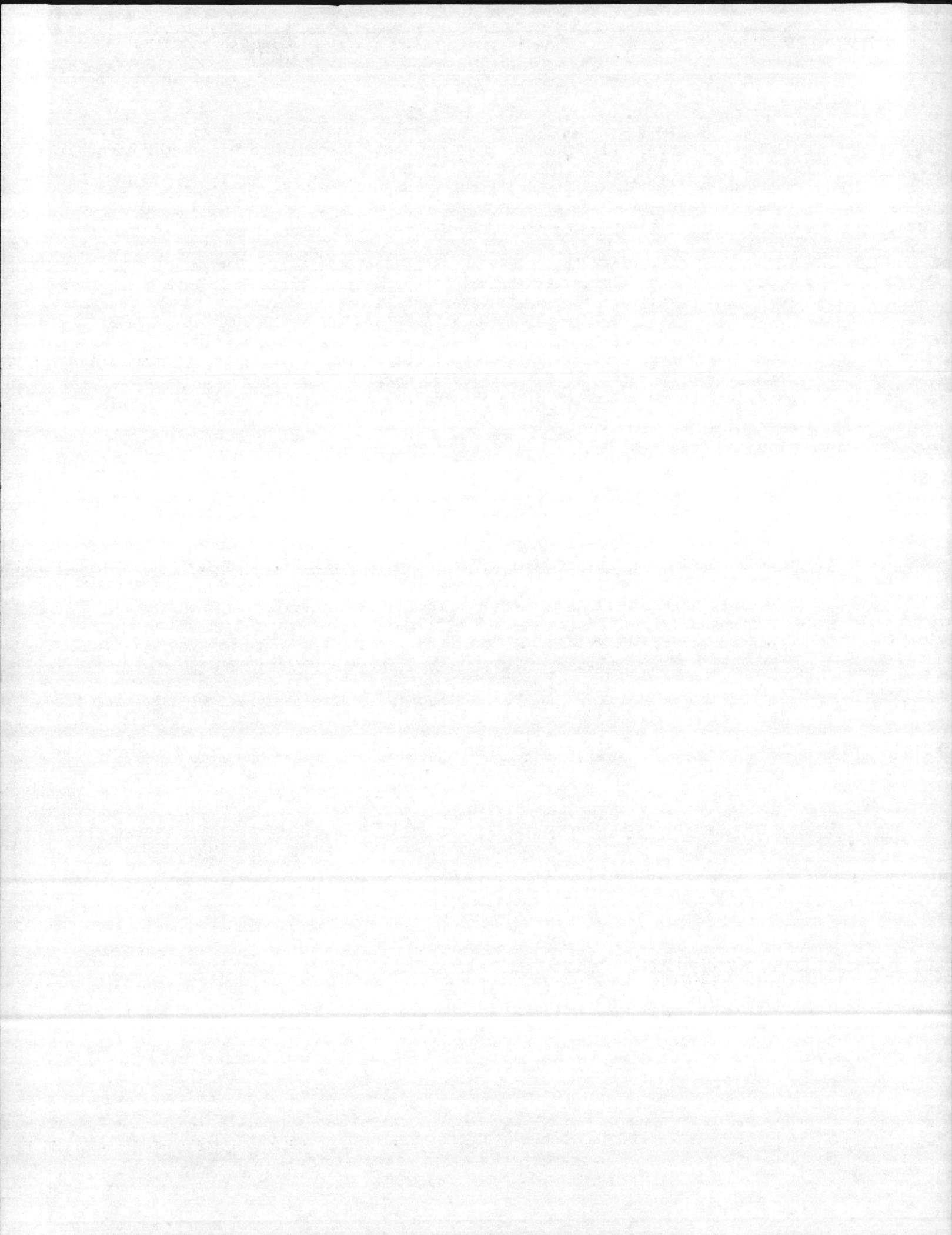
Disposal of waste or debris in active public waste or disposal areas will not be permitted without prior approval by the Engineer. Such disposal will not be permitted when, in the opinion of the Engineer, it will result in excessive siltation or pollution.

### 330-3 COMPENSATION.

Payment for the work of seeding and mulching waste or disposal areas will be made at the contract unit prices for the items established in the contract as payment for the work of seeding and mulching.

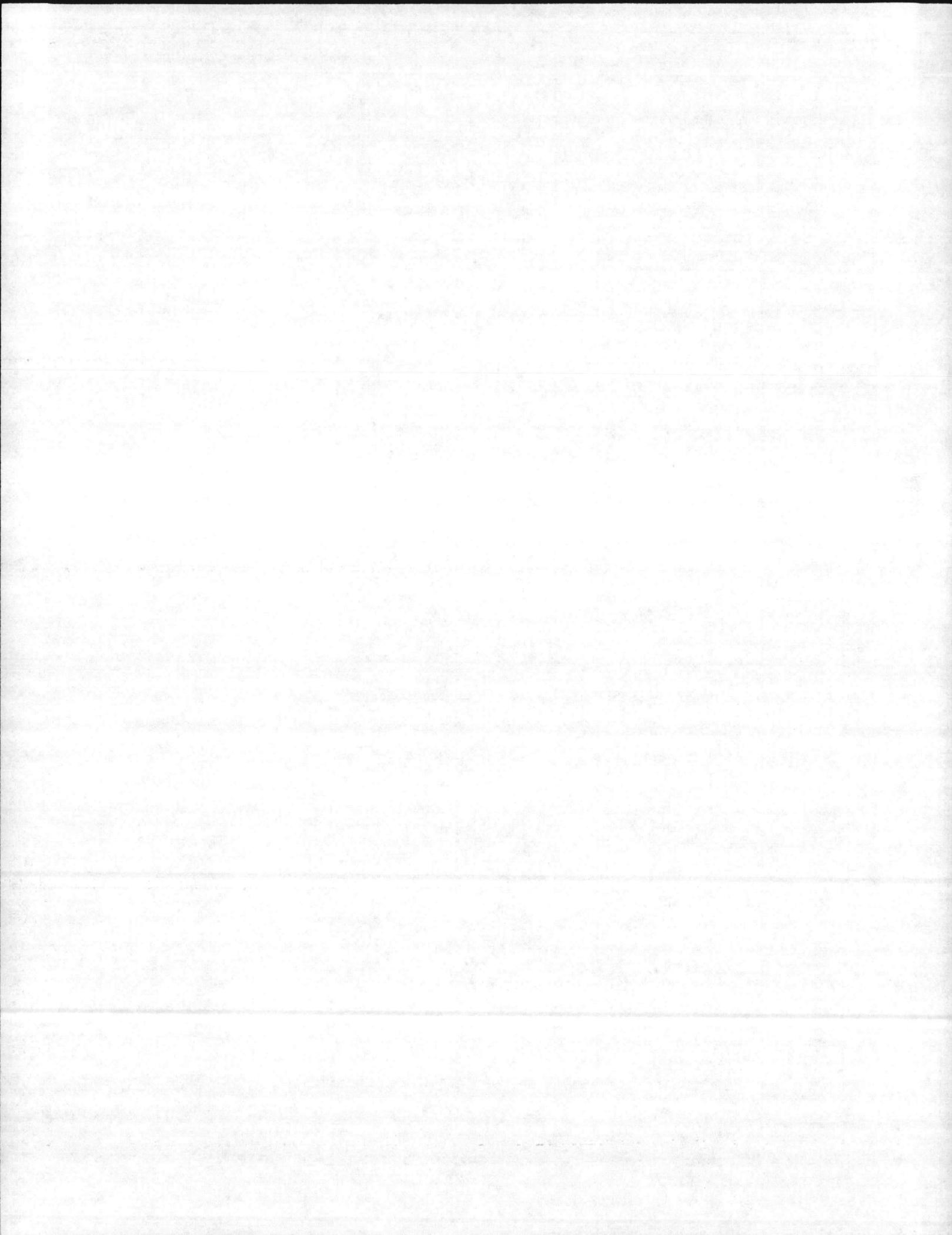
When waste areas are located within the right of way and borrow is needed in order to cover debris, rock, broken pavement, or masonry, payment for such borrow will be made at the contract unit price for the item of "Borrow Excavation" in accordance with the provisions of Article 26-5.1. When waste areas are located outside the right of way, no payment will be made for any borrow used to cover debris, rock, broken pavement, or masonry.

Except as otherwise provided above, no direct payment will be made for the work covered by this section. Payment will be included in the contract prices for the various items in the contract. Such prices and payments will be full compensation for all work covered by this section including but not limited to furnishing any waste areas; any right of access to waste areas; disposing of waste and debris; dressing and shaping of waste areas; furnishing and spreading earth material over debris, rock, broken pavement, and masonry; clearing and grubbing of waste areas; and hauling waste and debris to waste areas.

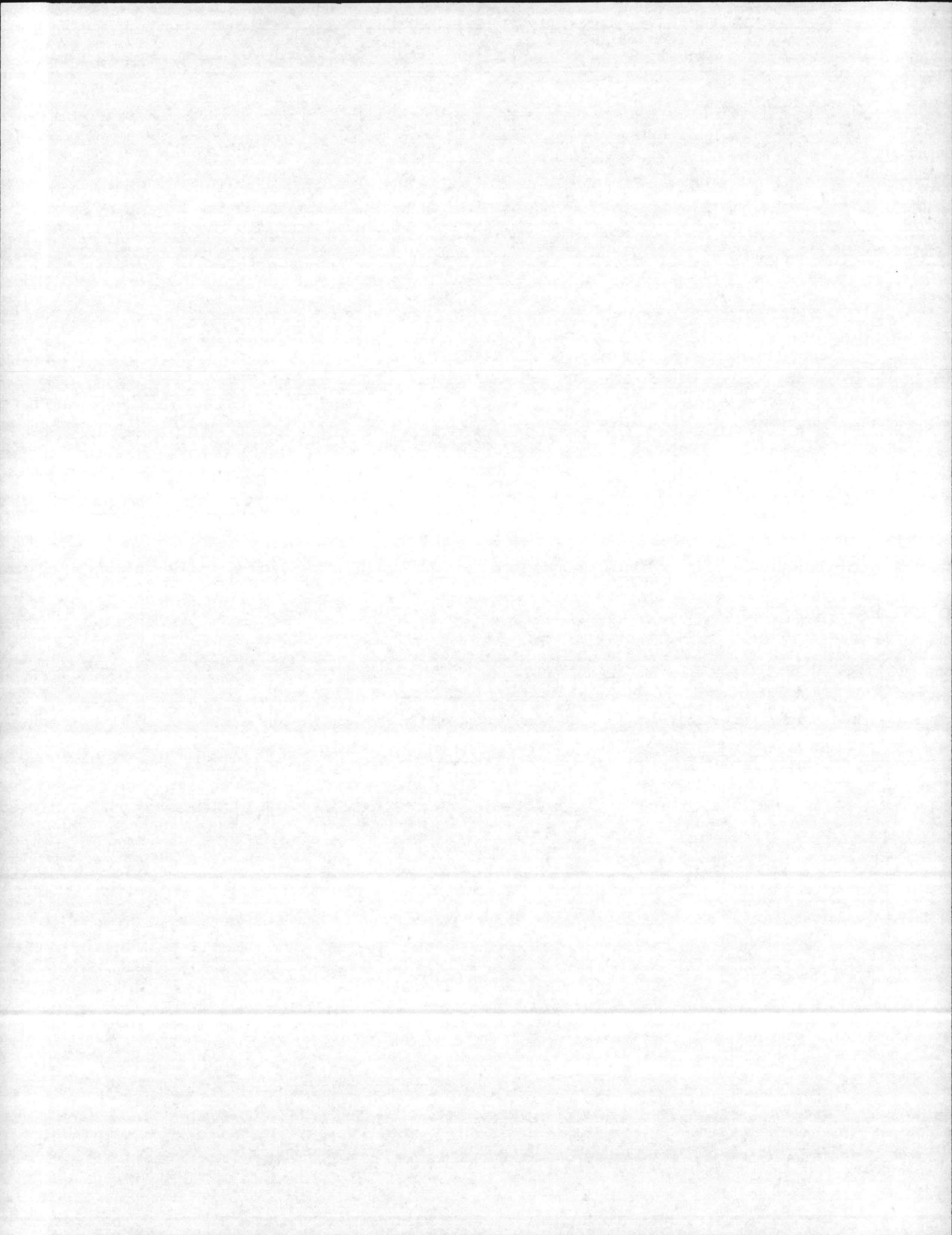


ITEM NO.			ITEM DESCRIPTION	QUANTITY AND UNIT	UNIT BID PRICE		AMOUNT BIDDING	
LINE CODE	SECTION CODE	DESC. CODE			DOLLARS	CENTS	DOLLARS	CENTS
1	SP	1	Mobilization	1 Lump Sum	L.	S.		
2	SP	U	3/4" Galvanized Steel Water Pipe	1,126 L. F.				
3	SP	U	1" Galvanized Steel Water Pipe	144 L. F.				
4	SP	U	1 1/4" Galvanized Steel Water Pipe	1,037 L. F.				
5	SP	U	1 1/2" Galvanized Steel Water Pipe	456 L. F.				
6	SP	U	6" Asbestos Cement Water Pipe, Class 150	757 L. F.				
7	SP	U	8" Asbestos Cement Water Pipe, Class 150	890 L. F.				
8	SP	U	12" Bit. Coated C. M. Encasement Pipe, Type A, 16 Ga.	50 L. F.				
9	SP	U	15" Bit. Coated C. M. Encasement Pipe, Type A, 16 Ga.	55 L. F.				
10	SP	U	3/4" Curb Stop and Drain Valve, Service Box and Cover	10 Ea.				
11	SP	U	1 1/4" Curb Stop and Drain Valve, Service Box & Cover	15 Ea.				
12	SP	U	1 1/2" Curb Stop and Drain Valve, Service Box & Cover	5 Ea.				
13	SP	U	6" Gate Valve and Box	2 Ea.				

NOTE - BIDDERS MUST CARRY OUT THE EXTENSIONS



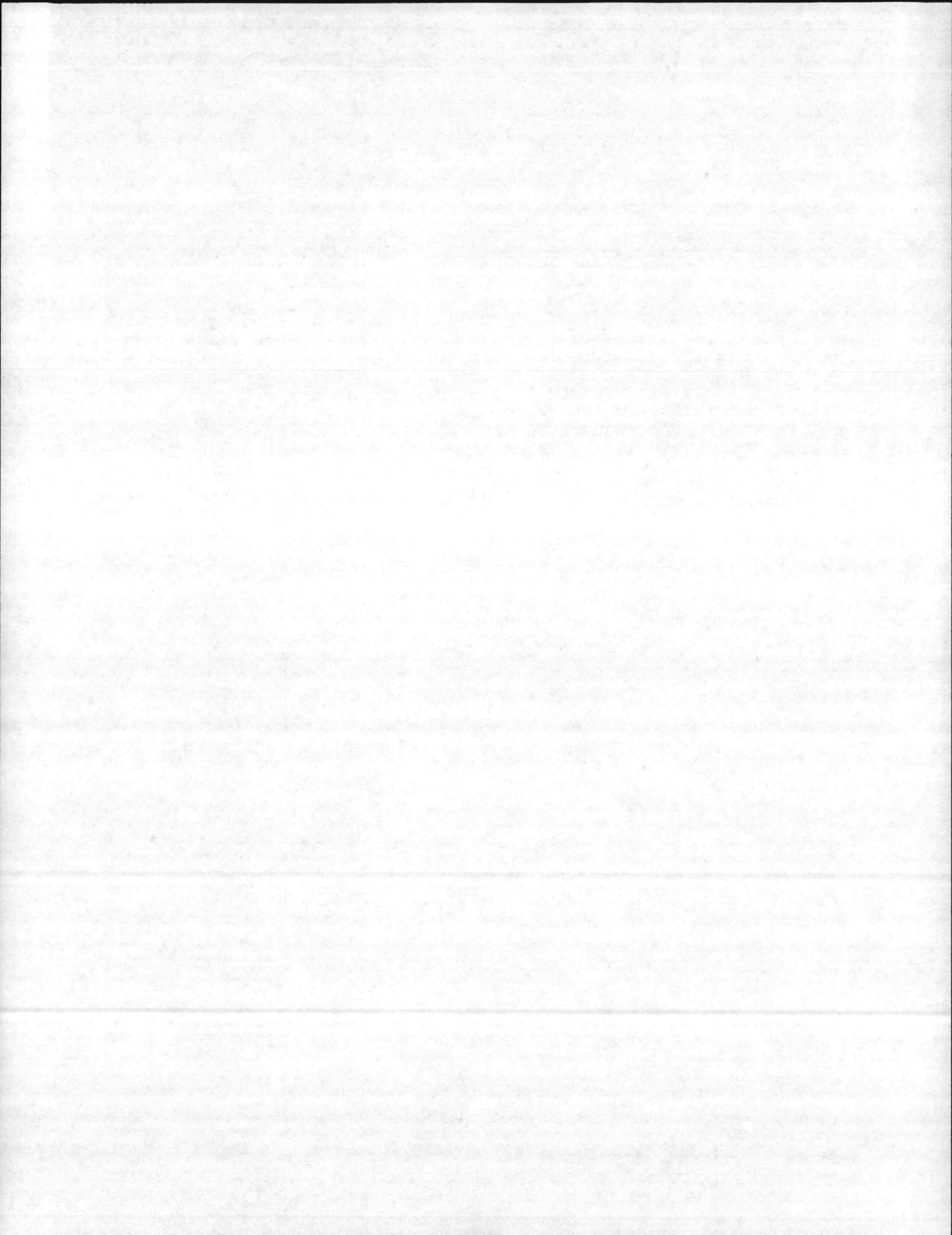
ITEM NO.			ITEM DESCRIPTION	QUANTITY AND UNIT	UNIT BID PRICE		AMOUNT BI	
LINE CODE	SEC-TION CODE	DESC. CODE			DOLLARS	CENTS	DOLLARS	C
					14	SP	U	6" Tapping Sleeve and Valve
15	SP	U	Furnish and Install Fire Hydrant	2 Ea.				
16	SP	U	Cast Iron Fittings	1,554 Lbs.				
17	SP	U	Sewer Cleanout	16 Ea.				
18	SP	U	4" Vitrified Clay Sewer Pipe	1,418 L. F.				
19	SP	U	6" Vitrified Clay Sewer Pipe	790 L. F.				
20	SP	U	8" Vitrified Clay Sewer Pipe	318 L. F.				
21	SP	U	6" Cast Iron Soil Sewer Pipe	64 L. F.				
22	SP	U	Rebuild Existing Sewer Man-holes, Furnish & Install 3 Manhole Rings & Covers	Lump Sum	L.	S.		
23	SP	U	Standard 4'-0" Sewer Man-hole (0 to 6'-0" Depth)	2 Ea.				
24	SP	U	Install Complete Electrical Distribution System and Fire Alarm System	Lump Sum	L.	S.		
			Total Amount of Bid:					



May 1, 1967

SWORN STATEMENT RELATIVE TO COLLUSION, ETC.

In compliance with Section 112(c) of Title 23 USC, and current regulations of the N.C. State Highway Commission, the successful Bidder will be required to furnish the Commission with an affidavit certifying that the Bidder has not entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with his bid on the project. Such affidavit will be required prior to award of the contract. Affidavit forms will be furnished the successful Bidder by the Commission subsequent to the public opening of bids.



SIGNATURE OF CONTRACTOR

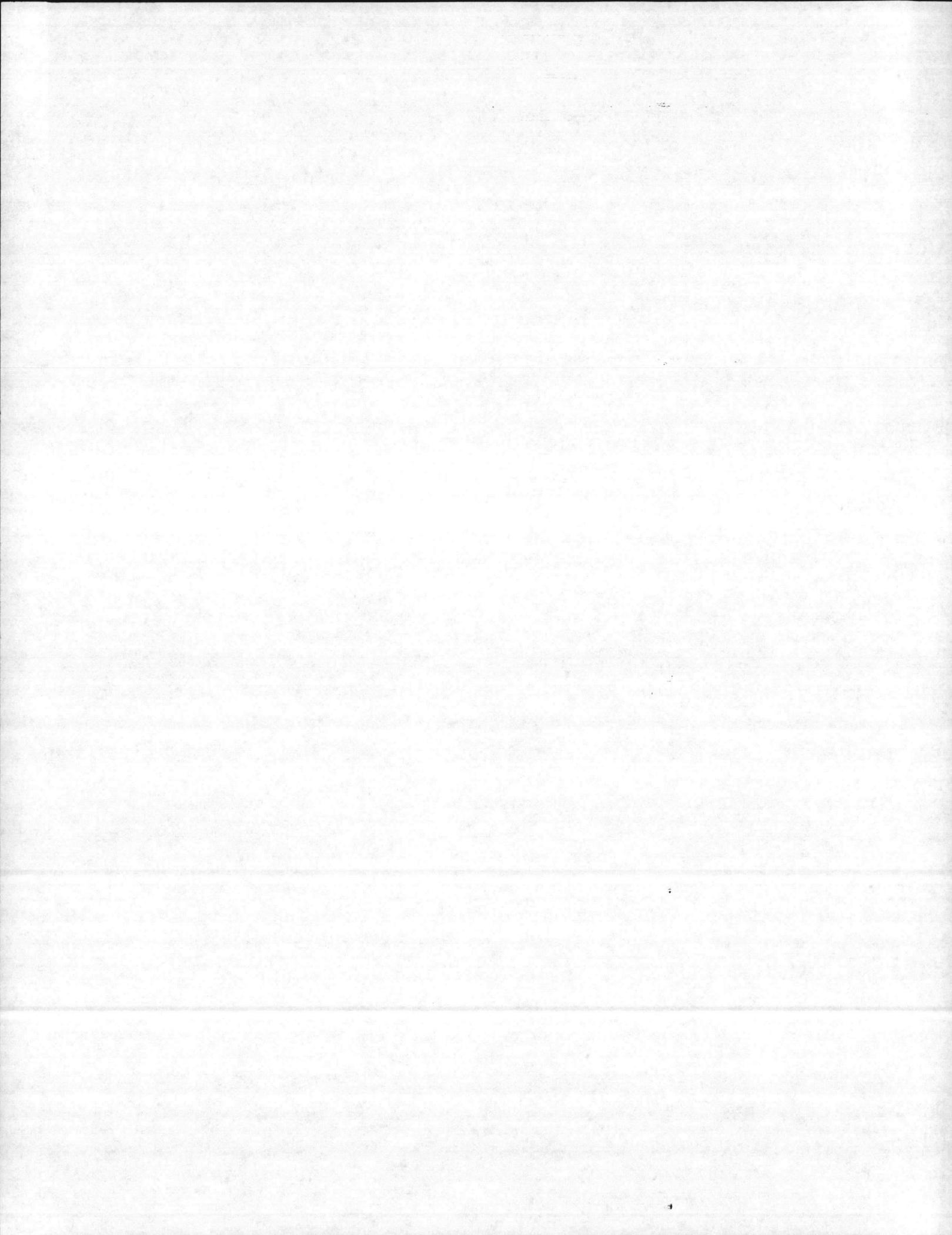
(If an individual doing business  
under a firm name, use this sheet.)

Name of Contractor \_\_\_\_\_ trading  
(Print or type individual name)

\_\_\_\_\_  
Witness  
and doing business as \_\_\_\_\_  
(Print or type firm name)

Signature of Contractor \_\_\_\_\_ (Seal)  
Individually

Address of Contractor \_\_\_\_\_  
(Print or type)  
\_\_\_\_\_



SIGNATURE OF CONTRACTOR  
(If a Corporation, use this sheet.)

\_\_\_\_\_  
(Print or type full name of corporation)

Attest \_\_\_\_\_  
Secretary or Assistant Secretary  
(Delete inappropriate title)

By \_\_\_\_\_ (Seal)  
President or Vice President  
(Delete inappropriate title)

Address of Principal  
Office of Corporation \_\_\_\_\_  
\_\_\_\_\_

Affix Corporate Seal



**SIGNATURE OF CONTRACTOR**  
(If a partnership, use this sheet.)

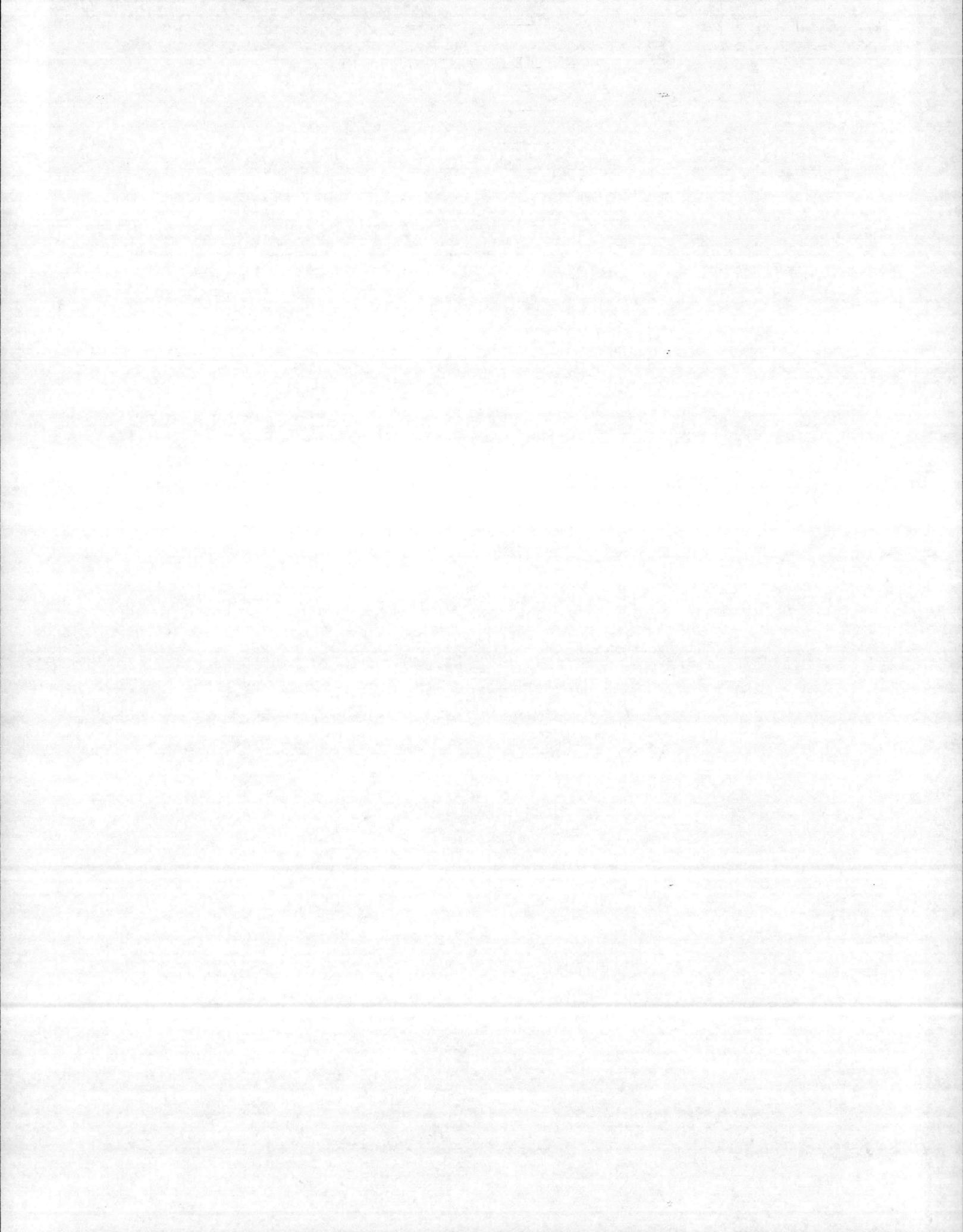
\_\_\_\_\_  
(Print or type Name of Partnership)

\_\_\_\_\_  
Witness

By \_\_\_\_\_ (Seal)  
Partner

Print or type  
Address of Partnership

\_\_\_\_\_  
\_\_\_\_\_



SIGNATURE OF CONTRACTOR  
(If a joint venture, use this sheet.)

Instructions to Bidders: On Line (1), print or type the name of each contractor. On Line (2), print or type the name of one of the joint venturers and execute below in the appropriate manner and furnish in the following lines all information required by Sub-Article 2.7(h) of the Specifications. On Line (3), print or type the name of the other joint venturer and execute below in the appropriate manner and furnish all information required by said Sub-Article of the Specifications. For correct form of execution and information required for execution of this sheet by an individual see signature sheets 1 and 2; for a corporation see signature sheet 3; and for a partnership see signature sheet 4. These forms of execution must be strictly followed and the required information furnished.

(1) \_\_\_\_\_ and \_\_\_\_\_  
A Joint Venture

(2) \_\_\_\_\_  
(Name of Contractor)

\_\_\_\_\_ By \_\_\_\_\_ (Seal)  
Witness or Attest

Address of Contractor \_\_\_\_\_  
(Print or type)

\_\_\_\_\_  
If corporation, affix  
corporate seal:

and

(3) \_\_\_\_\_  
(Name of Contractor)

\_\_\_\_\_ By \_\_\_\_\_ (Seal)  
Witness or Attest

Address of Contractor \_\_\_\_\_  
(Print or type)

\_\_\_\_\_  
If corporation, affix  
corporate seal:

