

SEWERAGE AND WATER BOARD

OF

NEW ORLEANS

SPECIFICATIONS

FOR

EXCAVATION AND FLOOD PROTECTION
OF THE
17TH STREET CANAL

PHASE III
LAKE PONTCHARTRAIN TO HAMMOND HIGHWAY BRIDGE

CONTRACT 4117

PROPOSALS TO BE OPENED
11:00 A.M. LOCAL TIME, FRIDAY, APRIL 15, 1988

17TH STREET CANAL

PHASE III

CONTRACT 4117

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SEWERAGE AND WATER BOARD OF NEW ORLEANS

ADVERTISEMENT

CONTRACT 4117

EXCAVATION AND FLOOD PROTECTION - 17TH STREET CANAL

PHASE III

LAKE PONTCHARTRAIN TO HAMMOND HIGHWAY BRIDGE

March 18, 1988

New Orleans, Louisiana

Sealed proposals will be received by the Sewerage and Water Board of New Orleans at the Office of its Purchasing Agent, ~~Room 5E14, City Hall, Civic Center, New Orleans, Louisiana 70165~~, up to 11:00 AM, Local Time, April 15, 1988 and publicly opened immediately thereafter for:

BIDS TO BE RECEIVED AT THE NEW SEWERAGE & WATER BOARD BUILDING ON ST. CHARLES AVENUE.

CONTRACT 4117

EXCAVATION AND FLOOD PROTECTION OF THE 17TH STREET CANAL
PHASE III: LAKE PONTCHARTRAIN TO HAMMOND HIGHWAY BRIDGE

Drawings, specifications and proposal forms may be obtained from the Sewerage and Water Board Purchasing Agent, and will be issued only to Contractors and/or Sub-Contractors who are licensed by Louisiana State Licensing Board for Contractors under Louisiana Revised Statutes 37:2157 through 37:2163, as amended, and who have furnished satisfactory evidence to the Purchasing Agent of the Board that they are licensed and are qualified to perform the work called for in the specifications. The right is reserved to reject any and all proposals and to waive informalities.

A Pre-Bid Conference will be held at 10:00 AM, Thursday, March 31, 1988 in the First Floor Conference Room of the New Engineering Building at the Carrollton Water Plant - 8800 S. Claiborne Avenue at Eagle Street. Prospective bidders are advised to visit the project site and familiarize themselves with the area prior to attending this meeting.

A charge of fifteen dollars (\$15.00) will be made for each set of drawings and specifications issued to each Contractor or Sub-Contractor. No refund will be made for their return.

The drawings governing the work of this contract are as follows:

Drawing No. 7512-D:

Excavation and Flood Protection - 17th Street Canal
Phase III

Lake Pontchartrain to Hammond Highway Bridge
(Sheets Nos. 1- 21, 101-117 and 201-207)

HAROLD GORMAN
EXECUTIVE DIRECTOR

G. JOSEPH SULLIVAN
GENERAL SUPERINTENDENT

Section ()

Certification and Representation

() SOUTH AFRICAN APARTHEID POLICY OF
THE SEWERAGE AND WATER BOARD

- (1) No funds of the Sewerage and Water Board of New Orleans shall be used for the purchase of supplies, materials, goods or services from businesses which are South African National Corporations or business entities organized under the laws of South Africa or Namibia (Southwest Africa) or from any business or subsidiary of any business which has investments, licenses or operations in the Republic of South Africa or Namibia.
- (2) All bidders, at the time of submitting bids, shall certify that they are in compliance with the above requirements and understand that their failure to comply or to submit a false declaration may result in the rejection of their bid or revocation of award, and such other penalties as allowed under the law.
- (3) The Board shall have the right to waive the imposition of this policy where it is demonstrated that such supplies, materials, goods or services cannot be otherwise purchased or they are essential to the delivery of public services.

() CERTIFICATION

I hereby certify that I have read and understand the statement prohibiting the use of SEWERAGE AND WATER BOARD OF NEW ORLEANS funds for purchase of supplies, material, goods and services from businesses which are South African National Corporations or business entities organized under the laws of South Africa or Namibia (Southwest Africa) or from any business or subsidiary of any business which has investments, licenses or operations in The Republic of South Africa or Namibia. I certify to the SEWERAGE AND WATER BOARD OF NEW ORLEANS that this company and the work to be performed under this contract will be in compliance with this policy.

NAME/TITLE

COMPANY

DATE

() Minority Participation Program

Pursuant to R.S. 38:2233.2.D, A minimum of twenty percent (20%) of the total dollar bid shall be placed with local minority subcontractors. This percentage requirement as it pertains to either the percentage local minority participation or the percentage minority participation or both may be waived or adjusted if the contractor, after a good faith effort, is unable to comply with the requirement. This requirement shall be considered an informality subject to modification or waiver by the Board. Said good faith effort shall be certified by the Board's Executive Director, or designated representative, who shall recommend to the Board any waivers or adjustments in such percentages. The bidders must furnish to Sewerage and Water Board details of minority participation at the time of bid. The details shall include name of minority business, contact name and phone number, nature of task, dollar amount and percent overall contract value. Additionally, each of the minority participants shall submit at the time of bid a completed minority application for certification to the Sewerage and Water Board or evidence of prior certification by the Board.

() All bids or offers on prime contracts covered by this section shall include the following:

- (a) The names of the employee of the offeror or bidder who shall administer the subcontracting program.
- (b) Documentation of the efforts which the offeror or bidder undertook to obtain MBE subcontractors.

() The following furnished documentation is determinative of affirmative good faith efforts pursuant to para. 3 above.

That the prime contractor has:

- (a) Made every effort to seek out all available qualified, bona fide MBE's, and has actually obtained a percentage local minority participation level not significantly out of line with that of the other bidders,
- (b) Provided technical assistance as needed to lower or waive bonding requirements for MBE's where feasible,

- (c) Solicited the aid of the Office of Minority Business Enterprise, the Small Business Administration, or other sources for assisting MBE's in obtaining required working capital,
 - (d) Given guidance through the intricacies of the bidding process,
 - (e) Performed any other deeds to meet the minority as well as the local minority participation requirement.
- () The Board's Executive Director (or designee) will review not only the different actions taken by the contractors, but also the quantity and intensity of these actions and make recommendations to the Operations Committee that the contractor has complied with the MBE participation requirement.

SEWERAGE & WATER BOARD
ORLEANS PARISH

MINORITY BUSINESS CERTIFICATION APPLICATION

The Sewerage and Water Board (Board) of New Orleans, pursuant to L.S.A. R.S. 38:2233.2 has adopted a Minority Action Program for construction.

All applications for certification under this program shall meet the following requirements in order to be accepted by Board staff.

- (a) All application forms shall be completely filled out, printed in ink or typed;
- (b) All required documentation shall be supplied;
- (c) The application shall be verified by the applicant on the affidavit form supplied; and
- (d) The Board's staff shall conduct an interview and on-site visitation and verification of the applicant's firm.

Any application which does not meet the requirements for filing set forth above shall not be accepted for filing.

I. GENERAL/ADMINISTRATIVE:

A) Company name: _____

Federal Employer Identification Number: _____

(9 digit IRS
941 Form
Employer Number)

B) Business address of Principal Place of Business: _____

(Post Office Box Number unacceptable)

C) Business Phone: _____

D) Mailing address: _____

(If different from B) Post Office Box number is
acceptable

E) Company Contact person's name: _____

Title: _____

Phone: _____

F) Applicant is at least 51% owned, controlled and actively
managed by:

(Check the status under which firm is applying)

_____ Black

_____ Hispanic

_____ Asian

_____ Native American (includes American Indian,
Eskimo, Aleut and Native Hawaiian)

_____ Female

G) Citizenship or Permanent Resident (Note: Attach proof
of citizenship/resident status if born outside U.S.A.)
(Check the status under which firm is applying.)

_____ United States Citizen

_____ Lawful Permanent Resident of United States

H) If applicable provide below a brief description of EEO and affirmative action record of applicant.

I) Is this business an affiliate or subsidiary of another business? _____

yes no

If your answer is "yes", you must complete a certification form for that other business.

II. NATURE OF BUSINESS:

A) General Capabilities

(Check the status under which firm is applying.)

_____ Construction

_____ Wholesale Distribution

_____ Manufacturing or Production

_____ Retail Dealer

_____ Service Organization

_____ Other-specify: _____

B) Identify Special Capabilities (i.e. roof repair, heavy construction, etc.)

(Do not list more than three).

1. _____

2. _____

3. _____

C) Number of years in business, under current ownership, in each of the special areas of capability (II B-1) _____ years
(II B-2) _____ years
(II B-3) _____ years

D) List gross receipts (sales for the last three years (3) years) for each area in which you list a special capability:

Sales From:

	II. B-1:	II. B-2:	II. B-3:
19__	\$ _____	\$ _____	\$ _____
19__	\$ _____	\$ _____	\$ _____
19__	\$ _____	\$ _____	\$ _____

E) Number of total years firm has been in business _____ years.

F) Number of Present Employees _____

Floor space (sq.ft.) Mfg:* _____
 Warehouse:* _____
 Office:* _____

(* Indicate location i.e. Orleans Parish or outside Orleans Parish)

G) Attach Condensed Financial Statements (balance sheets and income statements) for the last three years (this requirement is not applicable to newly formed businesses.)

H) Attach current Balance Sheet (Assets and Liabilities)

I) Attach current U.S. Corporate Income Tax Return or U.S. Individual Income Tax Return (Schedule C).

J) If business is newly formed, attach projected balance sheet and income statement for the next twelve (12) months.

K) List the three largest projects completed by your firm in the last three years, and the kind of work performed on those projects.

Work Preformed by your firm (G)=General (S)=Sub	Owner/General Contractor and Person to Contact	Telephone No. of Contact Person	Your Contract Amount
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

B) Attach copies of certification letter or denials from other agencies.

V. Ownership and Control:

An applicant concern must be owned and controlled by one or more persons who have been deprived of the opportunity to develop and maintain a competitive position in the economy because of social or economic disadvantage.

"Owned and controlled" means a business:

- (a) which is at least fifty-one (51) percent owned by one or more minorities, or, in the case of a publicly-owned business, at least fifty-one percent of the voting stock of which is owned by one or more minorities; and
- (b) whose management and daily business operations are controlled by one or more such individuals.

An MBE is bona fide if the minority group ownership interests are real and continuing and not created solely to meet the percentage MBE requirement. For example, the minority group owners or stockholders should possess control over management, interest in capital and interest in earnings commensurate with the percentage of ownership on which the claim of minority ownership status is based.

A. Ownership:

1. Legal Structure: (Check the status under which firm is applying)

_____ Individual (Sole-Proprietorship)

_____ Partnership

_____ Corporation

_____ Joint Venture (Also Attach a Completed Schedule B)

_____ Association or Cooperative

NOTE: Sections 2, 3, 4 and Sections B-1 and B-2 which immediately follow should be skipped if you checked "Individual (Sole-Proprietorship)" above.

2. If applicable to your legal structure, attach a copy of: (Indicate by check mark () the document(s) attached)

_____ Articles of Incorporation (skip, if partnership)

_____ Certificate of Incorporation (skip, if partnership)

_____ By-Laws of Corporation (skip, if partnership)

_____ Copies of Outstanding Stock Certificates front and back (skip, if partnership)

_____ Articles of Partnership

_____ Profit sharing agreements

_____ Buy-sell agreements

_____ Joint Venture agreements (If a Joint Venture, also complete and attach Schedule B).

3. Identify all partners, proprietors, and stockholders by name, social security number, ethnic group, sex, years of ownership, ownership percentage and voting percentage.

A	B	C	D	E	F	G
Name	SSN	Ethnic Group	Sex	Years of Ownership	Ownership Percentage	Voting Percentage

4. Describe or attach a copy of any stock options or other ownership options that are outstanding, and any agreements between owners or between owners and third parties which restrict ownership or control of minority owners.

B. Control:

1. Identify all directors and officers of the applicant by name, social security number, ethnic group, sex, and title.

Name	SSN	Ethnic Group	Sex	Title
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

2. Identify by name, ethnic group, sex and title those individuals in the firm (including owners and non-owners) who are responsible for day-to-day management and policy decisions including but not limited to those having prime responsibility for:

<u>Decisions</u>	<u>Name</u>	<u>Ethnic Group</u>	<u>Sex</u>	<u>Title</u>
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a) Financial Decisions, such as:

1) check signing _____

2) Signing, co-signing
and/or collateralizing
for loans _____

- 3) Acquisition of lines
or credit _____

- 4) Surety bonding _____

- 5) Major purchases or
acquisitions _____
- 6) Signing of contracts _____

b) Management Decisions, such as:

- 1) Estimating _____
- 2) Marketing and
Sales Operations _____
- 3) Hiring and Firing
of Management
Personnel _____
- 4) Hiring and firing of
non-management personnel _____
- 5) Supervision of field/
production _____
- 6) Supervision of Office
Personnel _____

NOTE: Sole proprietorship should resume completing this application here by answering question #3 and all questions through the end of the application.

3) Please provide complete resumé and work history of any 10% or more owner or management official highlighting the qualifications for the responsibilities given him or her.

4) Provide copies of current lease agreements.

5) Provide copies of current notes payables and current long-term debt agreements.

C. Deprival of Opportunity to develop and maintain a competitive position in the economy because of social or economic disadvantage.

This minority set-aside plan is a remedial program intended to place minorities on a more equitable footing with respect to public contracting opportunities; and as such, is intended to provide preferred status only to those minority firms that have been victimized by past discrimination.

1) Denial of access to public contracting opportunities

- a) List all public contracting jobs over \$50,000.00 giving the dollar amount of the job(s), in which the applicant firm has participated in as general or subcontractor over the last three years.

<u>Name of Public Contracting Job</u>	<u>Dollar Amount Applicant Received for Work Performed*</u>	<u>Date Job Awarded</u>	<u>Date Job Completed</u>

*Place next to dollar amount a "(G)" if work was performed as a general contractor or a "(S)" if work was performed as a subcontractor.

- b) List all public contracting jobs over \$50,000.00 over the last three years, giving the dollar amount of the job(s), in which the applicant firm's bid as general or subcontractor was rejected.

<u>Name of Public Contracting Job</u>	<u>Dollar Amount of Job*</u>	<u>Date Bid Rejected</u>

Other factors: _____

VII. LIFE OF CERTIFICATION

The Minority business must be certified with the Sewerage and Water Board. The life of certification is two (2) years after which time the business may apply for re-certification. Re-certification may be applied within forty-five (45) days from expiration date.

VIII. REPORTING REQUIREMENTS

The Minority business or contractor shall notify the Board (via certified mail) of any and all changes in ownership structure of the contracting business or its parent. Such notification is due within three (3) working days from date of change. Failure by the minority business or contractor to notify the Board as required will result in Section IX penalties or immediate termination of existing contracts between parties.

IX. NON-COMPLIANCE/PENALTIES

Whenever it is determined that the applicant is not in compliance with the provisions herein, the Board may impose one or more of the following sanctions as it may deem appropriate.

1. Disqualification of a contractor from bidding.
2. Decertification of the minority business.
3. Suspension of any payment or part thereof due or to become due under the contract until such time as the contractor or any subcontractors is able to demonstrate compliance with the terms of the contract.
4. Termination of the contract, in whole or in part, unless the contractor or any subcontractor is able to demonstrate his compliance with the terms of the contract.
5. Suspension of the applicant's right to participate in future contracts awarded by the Sewerage and Water Board for a period of eighteen months.

X. AFFIDAVIT

I HEREBY DECLARE AND AFFIRM under penalties of perjury that

(name of company)
is a Minority Business Enterprise and that the contents of the foregoing "Minority Business Certifications Application" (Certifications Application) are true and correct, and that I am authorized, on behalf of the above firm, to make this affidavit. I further declare that should any of the foregoing information be false or incorrect in any material respect, the affiant in my own behalf or on behalf of the business interests I represent, consents to the imposition of one or more of the sanctions in section IX of this certification application.

Affiant

Sworn to and subscribed before me this _____ day of _____, 19__.

Notary Public

SPECIAL SPECIFICATIONS

CONTRACT 4117

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SECTION 1
GENERAL PROVISIONS

1-01 CONTRACT DOCUMENTS

The contract documents governing this contract consist of the following papers which, with the exception of the Contract Drawings, are bound together under one cover; namely:

Advertisement;

Certification and Representation;

Contract and Bond;

Section A of the General Specifications, including Information for Bidders and General Provisions;

* Section B of the General Specifications, covering general matters pertaining to construction;

* Section C of the General Specifications, covering materials;

** Louisiana Standard Specifications for Roads and Bridges (1982 Edition and all supplements)

These Special Specifications for Contract No. 4117 including the Form of Proposal and the Sections listed in Paragraph 1-03;

The Drawings listed in Paragraph 1-31

* These Sections are included in the set of Sewerage & Water Board General Specifications (see Paragraph 1-04)

** These specifications are available from the Louisiana Department of Transportation and Development.

Bidders may submit inquires concerning technical information to:
Modjeski and Masters
1055 St. Charles Ave.
New Orleans, LA 70130
(504) 524-4344

1-02 EXTENT OF CONTRACT

The work to be done under this contract consists of furnishing all labor, tools, plant and materials, and performing all operations necessary for: (1) the removal and satisfactory disposal of all dredge and excavation material and of all items of demolition as described in Section 2 of these specifications, (2) the reshaping and turfing of levees, (3) the construction of tied-back, cantilever, and pile-braced sheet pile walls, (4) the construction of a headwall structure and concrete closure wall, (5) the reconstruction of Orpheum Avenue and construction of a paved parking area, (6) the construction of a new pedestrian bridge, (7) the construction of boat slips, (8) the placement of riprap, (9) the construction and placement of a muck retainer, and (10) the relocation of a sewer and water main -- all as shown on the contract drawings and specified herein.

1-03 SPECIAL SPECIFICATIONS

The specifications governing the work to be done under this contract, as described in Paragraph 1-02, will be covered under the following headings:

- Section 1 - General Provisions
- Section 2 - Demolition
- Section 3 - Dredging, Disposal, and Levee Reconstruction
- Section 4 - Steel Sheet Piling
- Section 5 - Timber and Timber Preservatives
- Section 6 - Site Cast Concrete
- Section 7 - Turfing
- Section 8 - Structural - Pedestrian Bridge
- Section 9 - Miscellaneous Specifications
- Section 10 - Bid Proposal and List of Experience

1-04 GENERAL SPECIFICATIONS OF THE SEWERAGE AND WATER BOARD

The Sewerage and Water Board has discontinued the policy of issuing the applicable sections of the "General Specifications" with each contract specification. In implementing this system, each prospective bidder is given a complete set of the "General Specifications", without charge, with the first set of contractual drawings and bid data he receives. If he has previously received his complimentary set, he will not be entitled to additional sets without cost. His complimentary set of "General Specifications" is for his use on all future contracts which he may bid. Additional copies will be available to him at the office of the Purchasing Agent at a cost of \$5.00 per copy. Holders of these specifications will be kept advised of any changes that occur. Required AASHTO and LaDOTD Specifications shall be secured by the Contractor at his own expense.

1-05 BIDDERS TO EXAMINE LOCATIONS AND PLANS

Bidders shall make a personal examination of the location of the proposed work and of the surroundings thereof, and shall thoroughly acquaint themselves with the details of the work to be done, and all the conditions and obstacles likely to be encountered, including soil conditions in the performance and completion of the work. Bidders shall inform themselves as to the facilities for the transportation, handling and storage of equipment and materials, and they shall carefully study the plans, specifications and other contract documents and thoroughly satisfy themselves as to the conditions under which the work is to be done, and as to the character, qualities and quantities of work to be performed, and materials to be furnished, and be prepared to execute a finished job in every particular without any extra charge whatever except as may be specifically provided for elsewhere in these contract documents.

A Pre-Bid Conference will be held at 10:00 A.M., Thursday, March 31, 1988 in the 1st Floor Conference Room of the New Engineering Bldg. at the Carrollton Water Plant - 8800 S. Claiborne Ave. at Eagle Street.

A Pre-Construction Conference will be scheduled at a later date with the successful bidder.

1-06 QUALIFICATIONS OF BIDDERS

Each bidder shall submit to the Sewerage and Water Board of New Orleans, at the time of submission of bids, evidence satisfactory to the Board of his ability, experience and familiarity with work of the character specified, by completing the form titled "List of Experience" in Section 10 of these specifications. Bids received without the required data shall be considered informal and may be rejected.

1-07 LICENSE FROM SUCCESSFUL CONTRACTOR

Proposals will be received from only those Contractors who are licensed by the Louisiana State Licensing Board for Contractors under Louisiana Revised Statutes 37:2150 through 37:2163 as amended and are qualified under the provisions of the said Act to perform the work called for in these specifications. On any bid submitted in the amount of \$50,000.00 or more, the Contractor shall certify that he is licensed under the provisions of Louisiana Revised Statutes 37:2150 through 37:2163. Any bid in the amount of \$50,000.00 or more that does not contain the Contractor's certification and show the Contractor's license number on the bid envelope shall be automatically rejected, and shall be returned to the bidder stamped 'REJECTED' and shall not be read aloud at the public bid opening.

1-08 ORDER TO PURCHASE MATERIALS AND START WORK

Provided the low bid is acceptable to the Sewerage and Water Board, the proposal submitted by the low bidder will be tentatively accepted by the Board at its regular monthly meeting. The Contractor shall hold his prices firm for a period of sixty (60) days after the date of the bid opening. After approval by the City Council, the low bidder will be authorized by the Secretary-Executive Director of the Board to appear before the City Notary to sign the contract within ten (10) consecutive calendar days from the date of the notice. Within seven (7) days after the Contract has been signed, the Engineer will issue a "Purchase Order" which shall be the Contractor's authority to purchase materials for use on this Contract.

Materials ordered by the Contractor before the Purchase Order has been issued are at his own risk. The Board has no obligation concerning them.

A "Work Order" will be issued when the Contractor has sufficient material on hand to assure continued installation. The Contractor shall start work within ten (10) consecutive calendar days after the date of the "Work Order". Maximum delivery period after which a "Work Order" will be issued, is ninety (90) consecutive calendar days from the date of the "Purchase Order".

The Contract must be entirely complete in all respects and tendered to the Board in acceptable condition within one hundred eighty (180) consecutive calendar days after the date of the "Work Order".

1-09 LIQUIDATED DAMAGES FOR FAILURE TO START OR TO COMPLETE ON TIME

Special notice is hereby given to all Contractors that the terms stipulated under Paragraph No. 26, in Section A of the General Specifications entitle "FAILURE TO START, FAILURE TO COMPLETE", as well as the liquidated damages in the following paragraphs, will be rigidly enforced on this contract.

The liquidated damages for failure to start at the time specified in Paragraph 1-08, above, are hereby fixed at Two Hundred and Fifty Dollars for each calendar day of delay in starting (see Paragraph No. 26, in Section A of the General Specifications). The damages for failure to complete the contract at the time specified in Paragraph 1-08, above, are hereby fixed at Two Hundred and Fifty Dollars for each calendar day of delay in completion (see Paragraph No. 26, in Section A, of the General Specifications).

1-10 PAYMENT AND RETAINERS

Payment for the work to be done under this contract will be made by the Board in accordance with those paragraphs pertaining to payments in Section A of the General Specifications (Paragraph Nos. 55 to 60, inclusive), except as noted hereinafter.

Credits to be allowed to the Board by the Contractor for work abandoned (or not to be done) shall be figured on the same basis as "Extra Work".

On contracts that are priced under \$500,000, the Board will withhold 10% of the total amount earned as billed, until the contract is finally accepted and a clear lien certificate is submitted. Payment for materials stored shall be made at 90% of the paid invoice value and 10% retainage will be withheld from this amount. The material shall have been delivered to the job site prior to payment. This partial payment will be for the cost of the material, not the cost of installation for which payment will be made according to the specifications herein. Payment for lump sum items will be made on the basis of material in place less a 10% retainage.

On contracts that are priced over \$500,000, the Board will withhold 5% of the total amount earned as billed, until the contract is finally accepted and a clear lien certificate is submitted. Payment for materials stored shall be made at 95% of the paid invoice value and 5% retainage will be withheld from this amount. The material shall have been delivered to the job site prior to payment. This partial payment will be made for the cost of the material, not the cost of installation for which payment will be made according to the specifications herein. Payment for lump sum items will be made on the basis of material in place less a 5% retainage.

1-11 VARIATION IN ESTIMATED QUANTITIES - DREDGING

Where the quantity of a pay item is an estimated quantity and where the actual quantity of such pay item is more than fifteen percent above or below the estimated quantity, an equitable adjustment in the contract price shall be made upon the demand of either party. The equitable adjustment shall be based upon any increase or decrease in costs due solely to the variations above one hundred fifteen percent or below eighty five percent of the estimated quantity. The quantity to be used for this determination will be that computed by using the theoretical section, including allowable over depth and the before-dredging quantity survey.

1-12 CONFLICT BETWEEN GENERAL AND SPECIAL SPECIFICATIONS

In the case of any conflict between the "General Specifications" herein, and these "Special Specifications," the latter shall govern.

The fact that certain paragraphs of the General Specifications have been specified as applying to the contract does not in any way imply that paragraphs not quoted do not apply; in all cases where the General Specifications are not directly contradicted by these Special Specifications, the General Specifications shall have full force and effect; nor shall the fact that certain clauses of the General Specifications refer to operations not constituting a part of the work of this contract be construed as in any way weakening the binding force of the General Specifications in the remaining clauses.

1-13 SUBSTITUTE MATERIALS

If any materials called for in these specifications are not obtainable, the Contractor may offer substitute materials which are obtainable for the consideration of the Engineer. The contract time may be extended by the Engineer to allow the Contractor time to secure either the original materials specified or other substitute materials that are obtainable and acceptable.

1-14 PLANS AND SPECIFICATIONS FROM BOARD

The work shall be executed in strict conformity with the contract drawings and specifications, and the Contractor shall do no work without proper drawings and instructions. The Engineer will furnish to the Contractor, free of charge, all copies of contractual drawings and specifications reasonably necessary for the execution of the work, except as specified in Sections 1-01 and 1-04, and not to exceed ten (10) copies.

1-15 STANDARDS

Wherever in these contract documents, references are made to A.W.W.A., A.S.T.M., A.S.A., A.C.I., and/or other standards and/or requirements, it shall be understood that the latest standards and/or requirements of the American Standard Association, American Concrete Institute, etc., are intended and shall apply, except to the extent that said standards and/or requirements may be in conflict with applicable laws, ordinances, etc.

1-16 LINES, GRADES, ETC.

Paragraph 46, in Section A of the General Specifications is amended to read as follows:

"The Engineer will verify with the Contractor the permanent control points and bench marks for locations and elevations. From these established control points and bench marks, the Contractor shall establish all locations and grade of the work and shall be solely responsible for the exact position of all parts of the work with reference to these established lines and bench marks. The Contractor shall maintain his own field engineering force, that of the Engineer being for checking. The Contractor shall furnish, free of charge, all stakes, permanent bench construction, templates, instrument platforms, other materials necessary for marking and maintaining points and lines given. He shall furnish the Engineer such assistance as he may require in checking the layout of the work. The Contractor shall be

held responsible for the protection of all stakes and marks and if, in the opinion of the Engineer, benches or lines established by the Engineer have been destroyed or disturbed, they shall be replaced at the Contractor's expense.

The cost of establishing working control points and bench marks, and maintaining a field engineering force shall be included in the bid price.

Any deviation from the Contract Drawings not approved by the Engineer, shall be subject to correction at the Contractor's expense.

1-17 MATERIALS BY CONTRACTOR

All materials required for the various items of work shall be furnished by the Contractor.

1-18 CHANGES IN CONDITIONS

As it is impossible for the Sewerage and Water Board to guarantee that no changes in conditions will take place from the time bids are submitted until work is started, the Contractor will be required to assume responsibility for changes in conditions beyond the control of the Sewerage and Water Board. These contract documents with the Form of Proposal are issued to bidders with the understanding that the Board disclaims all responsibility to the matter of general conditions in the project area. Bidders must determine for themselves the conditions under which the work will be done and keep abreast of the changes. It is noted that the Engineer's Survey, as referenced to in these Special Specifications and the contract drawings, was current as of April, 1987.

1-19 DAMAGE TO PROPERTY

The Contractor shall assume full responsibility for any damage to any property of the Sewerage and Water Board or other owner, resulting from his work under this contract. He shall also put back into its original position and condition any and all sidewalks, curbing, roadways, neutral grounds, billboards, signs, etc., that he is required to remove to necessitate the completion of this contract. (See Paragraph No. 43 in Section A of the General Specifications.)

1-20 RESTORATION OF WORK AREAS

Upon completion of the work and before acceptance and final payment, the Contractor shall clean up the work areas and adjacent property and remove all surplus and discarded materials, rubbish, temporary structures, etc.

1-21 CONTRACTOR'S PLANS, SAMPLES AND DATA

The Contractor shall submit for approval, and with such promptness as to cause no delay in his work or in that of the Board, six copies of all shop assembly, erection, Manufacturer's or Fabricator's drawings of materials or equipment, requiring shop or field fabrication, assembly, or erection, together with other information in such detail as will permit the Engineer to judge whether the proposed material, equipment or arrangement will meet the general requirements of the contract drawings and specifications. The Engineer is to return two signed copies and retain four. When these drawings are final, and prior to start of work, the Engineer shall be furnished four prints for his files. All drawings shall measure 24" x 36".

At least two weeks time shall be allowed for the Engineer to approve the above drawings. However, the Engineer's approval will not relieve the Contractor of responsibility for omissions or correctness of quantities on such lists and diagrams, nor shall an oversight on the part of the Engineer relieve the Contractor of his responsibility relative to compliance with plans and specifications, unless the Contractor mentions in writing, specifically, the manner in which the item of material and/or workmanship does not comply.

1-22 TRUCKING THROUGH CITY STREETS

If necessary, to prevent littering city streets, trucks hauling spoil will be prohibited from being loaded above water level lines. All trucks hauling spoil will require liners as specified in Section 3-04.2 of these Special Specifications.

The Contractor shall clean all city streets used for trucking as may be directed by the Engineer.

The Contractor shall submit a plan, for approval by the Engineer, indicating all haul routes and job site points of access. Points of access will be subject to approval by the respective Levee Boards. Request for access shall be made through the Engineer.

1-23 CITY AND STATE SALES TAXES

The Contractor is to bear and pay City and State Sales Taxes, if any, and the Board shall be relieved of the obligation to pay the same.

1-24 PREVAILING LABOR STANDARDS

The minimum wages to be paid laborers and mechanics shall be the prevailing wages for corresponding classes of laborers and mechanics employed on projects of a character similar to the contract work, said prevailing wages to be determined by the Secretary of the U.S. Department of Labor. (See pages 1-16 through 1-20 of these Specifications).

The successful bidder is to make available to the Board complete records in connection with payment to employees during the term of the job in order to permit the Internal Audit Division to check as to adherence to the wage scale presently in effect in accordance with U.S. Government Standards.

1-25 INSURANCE REQUIREMENTS

For this contract, the limits set forth in Paragraph 16 of Section A of the General Specifications shall be amended to read as follows (unless specifically modified herein); all other insurance requirements in Paragraph 16 remain in effect.

(a) Workmen's Compensation Insurance:

Limits shall be \$250,000 each person and \$1,000,000 each accident.

(b) Comprehensive General Liability Insurance:

Limits of liability for bodily injury and/or death of not less than \$1,000,000 for any one person and not less than \$2,000,000 for all injuries and/or deaths. The limits of liability for property damage shall be not less than \$1,000,000 for each occurrence and not less than \$2,000,000 aggregate.

(c) Owner's Protective Liability Insurance:

The limits shall be the same as specified for Comprehensive General Liability Insurance above.

1-26 BID BOND

The Bidder's attention is directed to Paragraph 1, of Section A of the General Specifications, in which it is written, "Said bid bond shall be written in the same name of the party, firm or corporation offering the Proposal."

1-27 DEPOSIT

The Deposit of Bid Bond for this contract required in Paragraph 1, in Section A of the General Specifications, shall be not less than five percent (5%) of the total amount of the Proposal made payable to the Sewerage and Water Board of New Orleans, Louisiana, and subject to forfeiture if the Contractor fails to sign the contract and execute Bond within ten (10) calendar days of notification to come in and sign.

1-28 BID PRICE

Where a conflict exists between the written price and the price in figures, the written price shall take precedence in evaluating bids. The following methods will be used to resolve any arithmetic discrepancies found on bid forms as submitted by bidders:

- 1) Obviously misplaced decimal points will be corrected.
- 2) In the event of a discrepancy between the unit price and the extended price, the unit price will govern.
- 3) Apparent errors in the extension of unit prices will be corrected.

- 4) Apparent errors in the addition of lump sum and extended unit prices will be corrected.

Bids shall be submitted only on the forms provided herein, which shall not be detached from these specifications. Proposal forms submitted detached from the specifications will be rejected.

1-29 DISPUTES BY CONTRACTORS

Staff recommended awards based on bid results will be posted on a bulletin board located outside the Office of the Sewerage and Water Board Purchasing Department within 72 hours after the bid opening. Bidders may also telephone the Purchasing Department of the Sewerage and Water Board in order to determine the bid results.

If a Contractor or his representative feels that there may be an incorrect award he must notify the Purchasing Agent or Assistant Purchasing Agent, in writing, of his objection within 72 hours after the bid award recommendations are posted.

1-30 PROJECT SIGN

Within ten (10) days of the "Work Order" the Contractor shall obtain from the Board's Machine Shop, 8801 Spruce Street, New Orleans, La., the Project Sign for this contract. Twenty-four (24) hour notice of pick up must be made by calling Mr. Meridier at (504) 866-6437.

The sign is approximately eight feet (8') high by eight feet (8') wide, 3/4 inch thick plywood mounted on 2x4 wood frame. This sign is furnished to the Contractor at no cost; however, the Contractor shall erect the sign, providing the necessary 4x4 treated wood posts with 2x4 treated braces, set firmly in the ground to support the sign. Risk of loss due to damage of any kind shall remain with the Contractor from the time of pick up until the end of the contract period.

The Contractor shall remove the Project Sign at the end of the Contract period and dispose of it properly. The cost of pick up, erection, and removal of the Project Sign shall be included in his bid price. Except for the job sign specified above, no Contractor, Subcontractor, or separate Contractor, nor any supplier of material or equipment shall post or display any sign or advertising device on any part of the site, structure, fence or temporary structure.

1-31 DRAWINGS

The drawings governing the work of this contract are as follows:

Sewerage and Water Board of New Orleans
Contract 4117
Excavation and Flood Protection - 17th Street Canal

Phase III
Lake Pontchartrain to Hammond Highway Bridge

Drawing No. 7512-D: Sheet Nos. 1-21, 101-117 and 201-207

1-32 AS-BUILT DRAWINGS

Upon completion of the contract, the Contractor shall furnish "as-built" drawings consisting of one set of blue line prints, marked up to reflect any and all deviations from the original plans.

1-33 TRAFFIC

The Contractor shall schedule and plan his work to minimize interference with vehicular traffic. No interference with vehicular traffic of the Hammond Highway bridge will be permitted at any time.

All traffic re-routing, barricading, signing, lighting, and other construction traffic control devices shall comply with the Federal Highway Administration's "Manual on Uniform Traffic Control Devices" - Part VI, and shall be approved by the Engineer.

1-34 PRECONSTRUCTION CONFERENCE

The successful bidder and any subcontractors he may enlist will be required to attend a preconstruction conference prior to beginning work. The place and time for this meeting will be determined by the Engineer following the contract award.

1-35 CONTRACTOR'S ACCESS TO WORK SITE

The Contractor shall submit a plan for approval by the Engineer indicating all points of access. Points of access will be subject to approval of the respective Levee Boards. Request for access shall be made through the Engineer.

1-36 SIGNAL LIGHTS

The Contractor shall display signal lights on any equipment to be located in the canal at night. These lights must meet the approval of the Engineer's Representative.

1-37 RIGHTS-OF-WAY

The Sewerage and Water Board, the Orleans Levee Board, and the Jefferson Levee Board will provide rights-of-way required for construction purposes without cost to the Contractor. The rights-of-way which will be provided is restricted to a region bounded by the backside toe of slope of the Orleans Levee, a line five feet west of the west edge of Orpheum Avenue, the Hammond Highway Bridge, and Lake Pontchartrain. The Contractor shall obtain, at his own expense, any additional lands desired for his own convenience in the performance of the work. Any agreements made with public agencies or private concerns will be the sole responsibility of the Contractor. (See Section B, Paragraph 1, of the Sewerage and Water Board General Specifications.)

The Contractor will be required to make rights-of-way and access areas suitable for traveling to and from the work site. Upon completion of work, all rights-of-way and access areas must be left in a condition satisfactory to the Engineer. Contractor's access to the work site will be in accordance with paragraphs 1-19 and 1-20.

1-38 WORKING IN THE VICINITY OF EXISTING STRUCTURES

The Contractor shall exercise caution when working in the vicinity of existing structures. Repair of damage to any items will be the responsibility of the Contractor.

1-39 SEQUENCE OF CONSTRUCTION

The following sequence of construction is proposed for this project. Any deviations must be approved by the Engineer. Regardless of the sequence of construction used, the Contractor must maintain a level of flood protection equaling or exceeding that presently existing.

The Contractor should refer to Sheet Nos. 4, 6 and 7 of the Contract Drawings while reading the sequence which follows.

Orleans Side

The items of work described below pertain only to work to be done on the Orleans Levee, and as such, baseline stationing without offsets has been used to describe the various items.

A. Pile-Braced Wall and Floodwalls.

The Contractor shall first complete the required sheet pile work and levee modifications between Stations 545+83 and 552+15, and then remove any heavy equipment from this area.

A.1. The start of work shall be the tie-in of the required pile-braced sheet pile wall to the existing sheet pile wall, opposite Baseline Sta. 552+15. The Contractor shall be allowed to remove approximately 2 ft. of the existing concrete cap at the location of the tie-in, but shall not remove any existing sheet pile at this time. The Contractor shall limit his excavation to only that which is necessary to place the bracing piles, and shall not go below elevation 22.0 C.D.

A.2. The Contractor shall continue his work with installation of the required floodwall on the Orleans Levee from Sta. 552+15 to Sta. 545+83, and on the Orleans East-West Return Levee opposite Baseline Sta. 545+83.

A.3. Once the above sheet pile is in place, the Contractor shall shape the Orleans Levee as required on the land side of the wall, and down to elevation 22.5 C.D. on the canal side of the wall. He shall also shape the Orleans East-West Return Levee as required.

B. Cantilever Sheet Pile Wall.

B.1. Concurrent with Item A.3, the Contractor shall be allowed to continue driving sheet pile from Sta. 545+83 to Baseline "B" Sta. 540+86.4, leaving an opening where the required concrete wall is to be constructed.

C. Tied-Back Sheet Pile Wall.

C.1. Concurrent with Item B.1., and prior to installation of the remaining sheet pile north of Baseline "B" Sta. 540+86.4, the Contractor shall drive the timber piles, and pour the concrete for the required sheet pile wall anchor. The concrete shall be allowed to set for a minimum of 24 hours before driving sheet pile within 150 feet of the anchor.

C.2. After the concrete for the anchor has been allowed to set as described above, the Contractor shall install the required sheet pile from Baseline "B" Sta. 540+86.4, to that point where the required wall meets the anchor of the existing tied-back wall. At that time, the Contractor shall install as many new tie rods as possible, for that portion of the new tied-back wall that is in place. Completion of the required tied-back wall shall proceed as follows:

- a) Cut through the existing anchor.
- b) Continue driving sheet pile up to the next existing tie rod.
- c) Install as many tie rods as possible for the portion of new wall installed in Step b.
- d) Cut through the existing tie rod.
- e) Repeat Steps b through d until the new wall meets the existing wall.
- f) Remove just enough of the existing wall and just enough of the existing pedestrian bridge to allow for placement of the remaining sheet pile. (Note: The Contractor will encounter an existing 12-inch water main in this area which is an Item of Demolition. It is anticipated that this line will not be in service at such time however, it is the Contractor's responsibility to verify this. In addition, there is a 2" H.P. gas line attached to the existing pedestrian bridge at the time of this writing. It is anticipated that the owner of this line will have removed it prior to the Contractor working in this area. It shall however be up to the Contractor to verify this as well).
- g) Install the remaining sheet pile and tie rods.

D. Remaining Items of Work

D.1. The concrete closure wall, at the location of the 60-inch drainage pipes, shall be constructed at any time after the adjacent sheet pile is in place.

D.2. The headwall structure shall be constructed at any time prior to the removal of the existing tied-back wall. Demolition and removal of the two 60-inch drainage pipes, between the existing headwall and new headwall, shall be concurrent with construction of the new headwall structure.

D.3. Levee modifications north of Sta. 545+83 shall be done at any time after the sheet pile in that area is in place.

D.4. All of the above items of work (A.1 through D.3) shall be in place prior to the removal of the existing tied-back sheet pile wall. Removal shall be concurrent with dredging.

D.5. The sheet pile cap shall be poured at any time following installation of the sheet pile. The portion of wall to be underneath the new pedestrian bridge however must be capped prior to construction of the bridge.

D.6. Rip-Rap shall be placed after all dredging in that area is complete.

D.7. The turfing of all disturbed areas and all newly constructed embankments shall begin only after all other work in that area is complete.

Jefferson Side

The items of work described below pertain only to work to be done on the Jefferson side, and as such, baseline stationing without offsets has been used to describe the various items.

A. Preliminary Items of Work.

The following items of work are to be completed prior to any other work on the Jefferson side.

A.1. The Contractor shall relocate the sewer main along Orpheum Avenue, and make all house connections.

A.2. The Contractor shall relocate the water main along Orpheum Avenue, and make all house connections. (The Contractor should take note of the requirements regarding the water main on Sheet No. 9 of the Contract Drawings.) It will not be possible to cross the canal with the new water line at this time since the new bridge will not have been constructed yet.

A.3. The Contractor shall construct the anchor for the tied-back wall between Sta. 542+45 and Sta. 543+40. This is necessary at this time because one of the houses currently located on the east side of Orpheum Avenue is to be moved by others to a location near the west edge of the roadway within these limits. This house, once relocated, would be a hindrance to construction of the anchor in this area.

A.4. After the concrete for the portion of the anchor constructed in Item A.3 has been allowed to set for 24 hours, the Contractor shall backfill, compact and grade the trenched area in such a manner that the house can be moved across it. (There will be no direct payment for this).

B. Tied-Back Sheet Pile Wall.

(The Contractor is reminded that he must maintain one lane of traffic on Orpheum Avenue at all times, providing as necessary, a detour lane. There shall be no direct payment for this.)

B.1. Once the required portion of anchor in Item A.3 above has been constructed, the Contractor shall proceed with construction of the tied-back sheet pile wall and anchor at his discretion, but in accordance with the following requirements:

a) Prior to installation of any sheet pile, all timber anchor piles within 75 feet of that sheet pile shall be in place.

b) Any concrete poured for the anchor shall be allowed to set for at least 24 hours before driving any piling (timber or sheet) within 150 feet of the anchor.

c) The Contractor shall install the tie rods at his discretion, but prior to full excavation and dredging on the canal side of the wall. (Some excavation may be necessary for their installation.)

C. Remaining Items of Work.

C.1. The Contractor shall remove the required boatsheds, docks and piling at anytime prior to dredging or as required for installation of the required sheet pile wall and tie-backs.

C.2. The Contractor shall remove the existing sewer and water mains along Orpheum Avenue at any time following installation of the new lines, but prior to rebuilding the roadway. He shall verify that the old lines have been taken out of service before removing them.

C.3. The Contractor shall pour the cap for the sheet pile wall at any time after installation of the sheet pile and connection of the tie-backs. The portion of wall to be underneath the new pedestrian bridge however must be capped prior to construction of the bridge.

C.4. The Contractor shall rebuild Orpheum Avenue and construct the adjacent paved parking area at any time after the required sub-grade work in that area is complete, provided adequate detour roads are maintained.

C.5. The Contractor shall construct the boat slips and loading dock after dredging in that area is complete.

C.6. The Contractor shall turf all disturbed areas and newly constructed embankments only after all other work in that area is complete.

D. Miscellaneous.

D.1. The Contractor shall begin dredging only after Items A.1 through C.1 on the Jefferson side, Items A.1 through D.3 on the Orleans side, and the muck retainer are in place. Dredging shall begin opposite Baseline Sta. 538+77.5 and proceed toward the southern limit of dredging, 10 feet clear of the Hammond Highway bridge. Removal of the existing Orleans tied-back wall and the existing water main under the canal bottom shall be concurrent with dredging.

D.2. The Contractor shall remove the concrete pedestal for the existing water main at any time after the new main along Orpheum Avenue has been installed and service through the existing main terminated.

D.3. The Contractor shall proceed with construction of the pedestrian bridge as follows:

(a) the portions of the bridge on the landside of the respective sheet pile walls may be constructed at any time after the sheet pile, anchor and tie rods required underneath those portions are in place.

(b) the portion of the bridge between the respective sheet pile walls may be constructed after dredging underneath the bridge is complete.

D.4. Installation of the remaining portion of water main (not installed in Item A.2.) shall be concurrent with Item D.3.b.

CONTRACT BID AWARD NOTICE

In compliance with Louisiana Title 38:2301, the following information is submitted.

PROJECT NO: 17th Street Canal - Phase III
PREVAILING WAGE RATE LOL NO.: 14822 ISSUED: 2-29-88 EXPIRED: 5-29-88
CITY/PARISH LOCATION: Jefferson Parish
SUCCESSFUL BIDDER: _____
(NAME)

(ADDRESS)

(CITY/STATE)

TELEPHONE NO: _____

AMOUNT OF BID: _____

DATE CONTRACT SIGNED: _____

If we can be of further assistance, please advise.

AGENCY OR ARCHITECTURE FIRM
Ms. Martha L. Sternitzke
MODJESKI AND MASTERS

(NAME)

1055 St. Charles Avenue
(ADDRESS)

New Orleans, Louisiana 70130
(CITY/STATE)


(504) 524-4344
(TELEPHONE NO.)

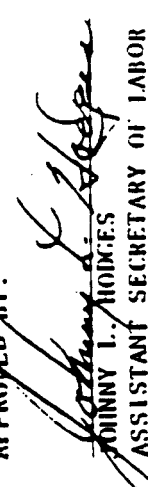
IMPORTANT
THIS FORM MUST BE RETURNED
ON DATE OF BID AWARD

When project contract award has been made, please fill out and return this notice to:

DEPARTMENT OF LABOR-OFFICE OF LABOR
PREVAILING WAGE RATE DIVISION
5360 FLORIDA BOULEVARD
BATON ROUGE, LA. 70806

TELEPHONE NO: (504) 925-4224


JOHNNY L. HODGES
ASSISTANT SECRETARY OF LABOR
OFFICE OF LABOR

LOUISIANA DEPARTMENT OF LABOR PREVAILING WAGE RATE DIVISION	REQUEST FOR WAGE DETERMINATION AND RESPONSE TO REQUEST AS AMENDED	R.S. 38:2301 (Act 65) and Related Statutes
Requesting Officer (Typed Name) Ms. Martha L. Sternitzke		
Requesting Agency or Architectural Firm MODJESKI AND MASTERS		
Date of Request 2-1-88	Estimated Advertising Date	Estimated Bid Opening Date
Prior Decision Number (If Any)	Estimated Value of Contract	Type of Construction <input type="checkbox"/> BUILDING <input type="checkbox"/> SUPPLYING & REPAIR <input type="checkbox"/> MARINE DRED. <input type="checkbox"/> HIGHWAY <input type="checkbox"/> HEAVY <input type="checkbox"/> WATER WELL <input type="checkbox"/> DRILLING
Location of Project 17th Street Canal		
Decision Number LDL No. 14822	Parish Jefferson Parish	State Louisiana
Effective Date 2-29-88	Address to Which Wage Determination Will Be Mailed Ms. Martha L. Sternitzke MODJESKI AND MASTERS 1055 St. Charles Avenue New Orleans, Louisiana 70130	
Expiration Date 5-29-88	Description of Project The work to be done includes dredging, earthwork, driving timber and steel sheet piling, construction of a steel pedestrian bridge, relocation of utilities, reconstruction of an asphalt roadway and pouring concrete.	
Supersedes Decision Number	PROJECT NO.:	
APPROVED BY:  JOHNNY L. HOLMES ASSISTANT SECRETARY OF LABOR OFFICE OF LABOR		

SECTION I: Wage Rate Decisions

- Rule 1: Work projects will be categorized under one of the following types of work:
- A. Building Construction
 - B. Highway Construction
 - C. Heavy Construction
 - D. Shipbuilding
 - E. Marine floating bucket or hydraulic dredging
 - F. Water well drilling
- Rule 2: Geographic boundaries shall be established for each craft by the Assistant Secretary of Labor.
- Rule 3: Every prevailing wage rate decision issued will list a minimum hourly wage rate and related fringe benefits for each classification of worker which may be expected to be utilized in the completion of the contracted project.
- Rule 4: Every prevailing wage rate decision issued will include a copy of these Prevailing Wage Rate rules in the form in which they are finally adopted.
- Rule 5: There may be issued such modifications or addendums to prevailing wage rate decisions as the Assistant Secretary determines is necessary to update wage rate data or to include additional job classifications.
- Rule 6: Decisions will include definitions of such workers classifications as the Assistant Secretary deems necessary. Additional definitions or clarification of job functions for workers classifications may be obtained upon submission of a request to the Assistant Secretary.
- Rule 7: Workers who perform job functions of a classification other than the classification in which they are listed shall be paid not less than the minimum wages issued for the classification in which they actually work.
- Rule 8: Apprentices indentured in an apprenticeship program approved by the Louisiana Office of Labor and who are performing job functions of the craft into which they are indentured shall be paid at the rate of pay resulting when the percentage points for the apprentices' current progression step is applied to the wage rate issued for the classification in which they are working.
- Rule 9: All workers, except those apprentices described in Rule 8 above, who perform work directly on the job site must be paid not less than the minimum wages issued for the classification in which they work.
- Rule 10: The contracting agency shall notify the Assistant Secretary for the Office of Labor of the successful bidder for the project and the date, time, and place of the prejob conference, which notice shall include an invitation to the Assistant Secretary or his designee to attend for the purpose of explaining the contractor's responsibilities under the prevailing wage law.
- Rule 11: It shall be the responsibility of the general contractor on the first day the job commences to post the entire prevailing wage rate decision including these rules in a prominent and easily accessible place at the site of the work. It shall also be the responsibility of the general contractor to furnish a copy of the prevailing wage rate decision for the project and a copy of the prevailing wage rate rules to each subcontractor involved in the project and to explain to the subcontractor his responsibilities with respect to R.S. 38:2301 and the contract for the applicable project.

SECTION II: Enforcement

- Rule 1: Field personnel of the Office of Labor will conduct inspection as assigned by the Assistant Secretary as well as routine inspections of the work projects for which a prevailing wage rate decision has been issued.
- Rule 2: On each inspection the Office of Labor's representative shall first ascertain whether the prevailing wage rate decision is posted. He or she may then witness the work being performed, conduct interviews with/or take written statements from management personnel and/or workers on the job site or what other investigative techniques he or she may deem to be appropriate in order to determine whether or not the workers are being paid in compliance with the terms of the prevailing wage rate decision.
- Rule 3: The Assistant Secretary or his designee, in order to ensure compliance and enforcement of a prevailing wage decision, may at any time during a project inspect the books and records of any contractor or subcontractor. The Assistant Secretary may initiate such inspection upon his own motion or after his receipt of an oral or written complaint from an employee on the project. The inspection of the books and records may take place at the jobsite or such other reasonable location specified by the Assistant Secretary or his designee, including but not limited to the office of the Assistant Secretary.
- Rule 4: The failure of a contractor or subcontractor to timely furnish the books and records requested by the Assistant Secretary or his designee or the furnishing of false or misleading information shall be deemed to be sufficient cause to preclude the waiver of the applicable penalty.
- Rule 5: Workers employed on a project for which a prevailing wage rate decision has been issued who suspect that they are not being paid in accordance with the schedule of wages listed in the decision should contact:

Louisiana Department of Labor
 Prevailing Wage Division
 5360 Florida Boulevard
 Baton Rouge, Louisiana 70806
 Telephone (504) 925-4224

- Rule 6: The names of all complainants shall remain strictly confidential whether such complaint is verbal or written.
- Rule 7: LSA - R.S. 23:964 reads as follows:

"Any employer who discharges, or in any other manner discriminates against any employee because such employee has testified in any investigation or proceeding relative to enforcement of any of the labor laws of the State of Louisiana, shall be fined not less than one hundred dollars nor more than two hundred fifty dollars, or imprisoned for not less than thirty days nor more than ninety days or both."

Any employer who violates the provisions of the above-quoted statute shall be reported to the District Attorney for the parish in which the offence occurred. The District Attorney shall be supplied with any and all supportive evidence of the violation and a request from the Assistant Secretary of Labor that the employer be prosecuted to the fullest extent of the law.

- Rule 8: These rules will abolish or supersede prevailing wage rules adopted on 11-20-80.

LOUISIANA DEPARTMENT OF LABOR/OFFICE OF LABOR

PREVAILING WAGE RATE DIVISION

III. HEAVY CONSTRUCTION

PAGE 3 OF 4 DECISION NO. LDL 14822

A. Mechanic* Defined as an employee using the tools of a skilled trade or craft in the performance of his/her work.

PARISH: JEFFERSON

CLASSIFICATION	CODES	BASIC HOURLY RATES	FRINGE BENEFITS
BRICKLAYERS/STONEMASONS		14.50	2.04
CARPENTER/PILEDRIVERMEN		14.31	2.60
CEMENT MASONS		13.22	1.68
ELECTRICIANS		14.00	2.94
CABLE SPLICERS		14.00	2.94
IRONWORKERS		14.54	2.43
LABORERS (INCLUDING TRAFFIC SAFETY SIGNALMAN)		9.57	1.08
LINE CONSTRUCTORS:			
<u>GROUP 1</u> - LINEMEN		12.10	1.70
<u>GROUP 2</u> - GROUND MEN		5.85	1.47
<u>GROUP 3</u> - WINCH TRUCK OPERATOR & TRACTOR DRIVER		8.72	1.58
<u>GROUP 4</u> - HOLE DIGGER OPERATOR		10.47	1.64
PAINTERS:			
<u>GROUP 1</u> : JOURNEYMEN		13.235	2.115
<u>GROUP 2</u> : SPRAY		13.61	2.115
<u>GROUP 3</u> : INDUSTRIAL		15.535	2.115

LOUISIANA DEPARTMENT OF LABOR/OFFICE OF LABOR
PREVAILING WAGE RATE DIVISION

III. HEAVY CONSTRUCTION

PAGE 4 OF 4 DECISION NO. LDL 14822

A. Mechanic* Defined as an employee using the tools of a skilled trade or craft in the performance of his/her work.

PARISH: JEFFERSON

CLASSIFICATION	CODES	BASIC HOURLY RATES	FRINGE BENEFITS
PLUMBERS/PIPEFITTERS/AIR CONDITION MECHANIC		16.80	2.43
POWER EQUIPMENT OPERATORS:			
<u>GROUP 1</u> : OPERATING ENGINEERS		14.31	2.50
<u>GROUP 2</u> : 60 TON CRANE & OVER		14.56	2.50
<u>GROUP 3</u> : CRANE WITH 125 FOOT BOOM		14.56	2.50
<u>GROUP 4</u> : CRANE WITH 175 FOOT BOOM		14.81	2.50
<u>GROUP 5</u> : JUNIOR ENGINEER		10.73	2.50
<u>GROUP 6</u> : OILER		8.59	2.50
SHEETMETAL WORKERS		12.00	3.39
TEAMSTERS		9.82	1.20
<u>WELDERS*</u> WELDERS RECEIVE RATES PRESCRIBED FOR CRAFT PERFORMING OPERATION TO WHICH WELDING IS INCIDENTAL.			

SECTION 2
DEMOLITION

2-01 STRUCTURES

The Contractor shall remove and dispose of all existing pilings, docks, boathouses, and any other structures, including the existing Bucktown pedestrian bridge, the concrete pedestal for the existing water main, and the existing headwall with concrete pipe, which may exist within the limits of work as indicated on the contract drawings and as specified herein. Piers and piling are to be pulled or cut off no higher than the proposed after-dredging ground line so that no structures obstruct the flow of water in the canal at the completion of the project. All products of demolition are to be hauled away and disposed of at a site chosen by the Contractor and approved by the Engineer.

The structures--but not their foundations--at the following addresses are to be removed by others: 1823, 1825, 1829, 1845, 1849, 1857, 1861, and 1863 Orpheum Avenue. It is anticipated that this work will be completed prior to the Contractor's start of work. The structure at 1867 Orpheum Avenue is to be relocated across the Street by others. (See Item A.3 of the Jefferson side sequence of construction, Paragraph 1-39 of these specifications).

2-02 OBSTRUCTIONS

The Contractor shall remove and dispose of all brush, trash, sunken boats, terminated utilities and any other obstructions which may exist within the limits of this project. These items are to be hauled away and deposited at an approved site. The Contractor will be responsible for any damage to levees, streets, sheet pile walls, etc., during demolition and hauling operations.

2-03 TIED-BACK SHEET PILE WALL

The Contractor shall remove and dispose of all existing sheet pile wall and appurtenances (tie-rods, wales, anchors, timber piles) on the Orleans side as indicated on the plans. Sheet piles and timber piles are to be either pulled or cut off no higher than the required ground line. The order and timing of removal must be submitted to and approved by the Engineer. Information regarding the configuration of the existing tied-back wall is located on Sheet Nos. 201 and 202 of the Contract Drawings.

2-04 MEASUREMENT AND PAYMENT

Payment for demolition (not including the tied-back sheet pile wall and pedestrian bridge), will be made at each payment period based upon the percentage of items removed that period and applied to the lump sum bid price for Bid Item No. 2. The weighted value of each structure to be removed will be mutually agreed upon by the Contractor and Engineer's Representatives prior to the commencement of work. Payment will be made in accordance with Paragraphs 55 through 60 of the General Specifications.

Removal of the existing tied-back sheet pile wall will be paid under Bid Item No. 3A, per lump sum.

Removal of the existing pedestrian bridge will be paid under Bid Item No. 3B, per lump sum.

SECTION 3
DREDGING, DISPOSAL, AND LEVEE RECONSTRUCTION

3-01 EXCAVATION

3-01.1 Dredging

Bucket dredging shall be the only method allowed within the limits of work shown on the contract drawings. All soil encountered while dredging is to be placed in an approved disposal area. No dredging will be permitted while Pump Station No. 6 is in operation. Dredging may resume when the Engineer has determined that all flow of water in the canal has ceased. Dredging will begin at the Hammond Highway Bridge and proceed to the Lake.

Dredging will not be permitted from the levees. Dredging is recommended from a system of flex-float barges. The Contractor shall obtain approval from the Engineer for the dredging system prior to commencement of work.

3-01.2 Levee Raising and Degrading

Levee raising and degrading shall be conducted as described in these Special Specifications in order to reshape the levees to coincide with the contract drawing requirements.

3-01.3 Excavation For Tied-Back Sheet Pile Wall Anchors

Excavation for the anchor of the Jefferson tied-back wall between Station 549+67 and Station 552+35 shall be as shown on Sheet No. 10 of the contract drawings.

It shall be the Contractor's responsibility to submit a plan for excavation for the remainder of the Jefferson tied-back wall and for the Orleans tied-back wall, for approval by the Engineer.

3-01.4 Flood Control

The Contractor is required to maintain flood control during all construction phases of the project. Any temporary flood protection must be built to a minimum elevation equivalent to that of the existing levees. The length of temporary flood protection must never exceed 250 feet. The Contractor must submit his plan for flood protection to the Engineer for approval prior to the commencement of work.

3-01.5 Silt Screens

Silt screens shall be placed within 200 feet downstream and upstream of the dredging operation to prevent silt travel, and shall meet approval of Engineer with respect to type, manufacturer, and usage.

3-02 CHARACTER OF MATERIAL TO BE DREDGED

The material to be removed from the canal within the specified limits may include sand, silt, clay, shell, logs, stumps, snags, debris, brush, rip-rap, sunken boats and other obstructions. Bidders are expected to examine the site and after investigation decide for themselves the character of the materials as stated in Paragraph 1-05.

3-03 THEORETICAL SECTION

3-03.1 After-Dredging Section

An after-dredging cross-section is herewith established which shall have a varying bottom width and bottom elevation in accordance with the contract drawings. Excavation of six inches of allowable overdepth below the profile grade will be permitted and side slopes will be 1 vertical on 3 horizontal unless shown differently on the plans. To gain acceptance, sections must be dredged to the specified profile grade, bottom width and side slopes. Payment will be made for the six inches of allowable overdepth below profile grade. However, the Contractor will receive no payment for material removed below the overdepth grade or beyond the required side slopes.

3-03.2 Levee Degrading and Raising

In those areas where the required top of levee elevation is above the existing top of levee elevation, a section of varying top width and a 3 horizontal to 1 vertical back slope is herewith established. Only suitable material for levee-raising may be used and must meet the approval of the Engineer. Material removed from existing levees requiring degradation as indicated on the plans, but not from canal bottom, may be used to raise levee elevation where needed.

3-04 DISPOSAL OF EXCAVATED MATERIAL

3-04.1 Hauling

All hauling must be done in accordance with Section 1-22 of this Specification.

All material dredged from the canal below elevation 22.5' (Cairo Datum) and all debris shall be hauled in lined trucks to an approved disposal site. It shall be the Contractor's responsibility to locate an appropriate disposal site and obtain approval of the site from the U.S. Army Corps of Engineers no later than June 1, 1988. The disposal site shall be a non-wetland area and if near a residential area the disposed material shall be covered by one foot of clean fill. It is highly recommended that the Contractor contact Mr. Lloyd Baehr's office (862-2259) of the Army Corps of Engineers for a judgement on the disposal site prior to bidding. Canal material below elevation 22.5' shall not be used for levee fill, nor shall it be placed at the excess levee material disposal site.

All excess levee material, above elevation 22.5, is to be hauled by truck to the designated disposal area site. This site is located south of the Civil Defense Shelter between Ponchartrain Boulevard and West End Boulevard. The exact placement will be as specified by the Orleans Levee Board.

3-04.2 Lining of Trucks

Measures must be taken to assure that no dredged material escapes from the trucks while being hauled to the disposal area. Trucks are to be lined with 6 mil polyethylene or any alternative method acceptable to both the Contractor and Engineer. The linings are to be inspected to ensure water tightness prior to each loading and shall be replaced at the sign of any potential leakage. Trucks hauling levee material will not require lining.

3-04.3 Grading of Spoil

Dredged canal material from below elevation 22.5' which is hauled to an approved site in accordance with Section 3-04.1, shall be graded to the satisfaction of the Engineer. If the disposal site is near a residential area, the canal material shall be covered by a minimum of one foot of clean fill at the completion of dredging.

Excess levee material shall be placed in the location described in Section 3-04.1 and shall be spread uniformly over the area, not exceeding two feet in depth. It shall be fertilized and seeded according to Section 7 - Turfing.

Debris, grass, weeds, roots, etc. shall be disposed of in the same manner as dredged material.

3-05 LEVEE DEGRADING AND RAISING

3-05.1 Fill Material

The material to be used for fill in levee construction shall be material removed from other sections of the same levee. No material from below elevation 22.5 ft. on the canal side of the levee may be used for fill or levee construction. Fill material shall be free from roots, grass, concrete, and other objectionable material.

3-05.2 Equipment

1. Tamping Rollers - shall consist of one or more units. Each unit shall consist of cylindrical drum not less than 48 inches in length and not less than 40 inches in diameter. The drums shall be water or sand and water ballasted. Each drum shall have staggered feet uniformly spaced over the cylindrical surfaces such as to provide approximately 3 tamping feet for each 2 square feet of drum surface. The tamping feet shall be 7 to 9 inches in clear projection from the cylindrical surface of the roller, and shall have a face area of not less than 5 or more than 14 square inches. The units shall be equipped with a suitable device for cleaning the feet. The rolling units of multiple-type tamping rollers shall be pivoted on the main frame in a manner which will permit the units to adapt themselves to uneven ground surfaces and to rotate independently. The weight of the roller shall not be less than 1150 pounds per linear foot of drum length weighted, and shall not be more than 675 pounds per foot of drum length empty. The roller shall be pulled by a tractor at a speed not to exceed 3.5 miles per hour.

2. Self-Propelled Tamping Roller - At the option of the Contractor, self-propelled tamping rollers conforming to the requirements of Paragraph 3-05.2(1) above may be used in lieu of tractor-drawn tamping rollers. Self-propelled rollers exceeding the empty weight requirements may be used provided that, by the substitution of tamping feet having a face area not exceeding 14 square inches, the foot pressure on the tamping feet of the self-propelled roller can be adjusted to approximately the foot pressure of the towed roller for the particular working condition. In no case shall the foot areas for self-propelled tamping rollers be less than those specified for the towed rollers. For self-propelled rollers in which steering is accomplished through the use of rubber-tired wheels, the tire pressure shall not exceed 40 pounds per square inch. The roller shall be operated at a speed of not more than 3.5 miles per hour.

3. Rubber-Tired Rollers - Rubber-tired rollers shall have a minimum of four wheels equipped with pneumatic tires. The tires shall be of such size and ply as to be capable of being operated at tire pressures between 80 and 100 pounds per square inch at a 25,000 pound wheel load. The roller wheels shall be located abreast and so designed that each wheel will carry approximately equal load in traversing uneven ground. The spacing of the wheel will be such that the distance between the nearest edges of adjacent tires will not be greater than 50 percent of the rated tire width of a single tire. The roller shall have a rigid steel frame provided with a body suitable for ballast loading such that the load per wheels may be varied, as directed by the Engineer, from 18,000 to 24,000 pounds. The roller shall be towed at speeds not to exceed 5 miles per hour.

4. Crawler-Type Tractors - Crawler-type tractors used for spreading or compaction shall weigh not less than 20,000 pounds, shall exert a unit tread pressure of not less than 6 pounds per square inch, and shall be operated at a speed not to exceed 3.5 miles per hour.

5. Sprinkling Equipment - Sprinkling equipment shall consist of tank trucks, pressure distributors, or other equipment designed to apply water uniformly and in controlled quantities to variable widths of surface.

6. Miscellaneous Equipment - Scarifiers, disks, spring tooth or spike tooth harrows, spreaders, power tampers, and other equipment shall be of types suitable for construction of levee embankment.

3-05.3 Embankment Foundation Preparation

Immediately prior to the placement of fill material, the entire earth surface on or against which fill is to be placed shall be thoroughly broken to a depth of 6 inches. If for any cause this broken surface becomes compacted in such a manner that, in the opinion of the Engineer, a plane of seepage or weakness might be induced, it shall again be adequately scarified before the depositing of material thereon. All scarifying and breaking of ground surface shall be done parallel to the centerline of the levee. All of the foregoing work shall be completed at least 200 feet in advance of the embankment construction.

3-05.4 Embankment Construction

Materials placed with hauling equipment shall be placed or spread in layers not more than 12 inches in thickness prior to compaction. Layers shall be started full out to the slope stakes and shall be carried substantially horizontal with sufficient crown or slope to provide satisfactory drainage during construction. When the surface of any compacted layer is too smooth to bond properly with the succeeding layer, it shall be adequately scarified before the succeeding layer is placed thereon.

It is the intent of these specifications to secure an embankment having the maximum density obtainable by placement of the embankment material at its natural moisture content. If the material, as removed from other levee areas, is too wet to obtain the desired density, it may be stockpiled and allowed to drain before it is placed in the embankment cross section, or the wet material may be processed by disking and harrowing, if necessary, until the moisture content is reduced sufficiently. No stockpiling will be allowed on the levees and all stockpile areas must be submitted to the Engineer for approval. If the material is too dry to obtain the desired density, the Contractor will be required to pre-wet the material in the borrow area, or to uniformly distribute sufficient moisture in each layer before rolling to permit the desired compaction.

When the moisture content and condition of the spread layers are satisfactory, each layer shall be compacted by any of the following methods at the option of the Contractor:

1. Tamper-Type Roller - Four complete passes over each layer will be required. If tamping rollers are used in tandem, not more than two rows will be permitted and, in such case, one trip of the tandem rollers over any surface will be considered as two passes. When tamping rollers are used in tandem, the tamper foot spacing shall be offset so that the circumferential rows on the rear drums are in line with the midpoint of the circumferential rows of the forwarded drums. Each pass of the tamping roller shall overlap the preceding or adjacent pass by not less than one foot.

2. Rubber-Tired Roller - Two complete passes over each layer will be required.

3. Crawler-Type Tractor - Three complete passes over each layer will be required.

A pass shall consist of one complete coverage of the surface of a layer by the treads of the roller, tractor, or other compacting equipment. Portions of the embankment which the compacting equipment cannot reach for any reason shall be compacted by an approved method to the density at least equal to the surrounding embankment.

If, in the opinion of the Engineer, the desired compaction of any portion of the embankment cannot be secured by the minimum number of passes specified, additional complete passes shall be made over the surface area of such designated portion until the desired compaction has been obtained.

Dressing: The entire embankment shall be brought to not less than the prescribed cross section at all points. Unreasonable roughness of surface shall be dressed out.

Grade Tolerances: All embankments shall be constructed to the grade and cross section shown on the drawings. A tolerance of three-tenths of one foot above the prescribed grade and cross section will be permitted in the final dressing provided that any excess material is so distributed that the crown of the levee drains, there are no abrupt humps or depressions in the surface or bulges in the width of the crown, and the side slopes are uniform. Any partial fill or temporary stockpiled material placed on the levees shall not exceed the grade or slopes of the embankment. Payment will be made for material placed above the prescribed section within the following limits: 0.3 foot above the crown width extending to the theoretical toes.

3-05.5 Adjacent Properties

The Contractor's attention is brought to the close proximity of a group of townhouses to the Orleans Levee. The Contractor shall take the necessary precautions to prevent any spillage of levee material onto the patios of these adjacent townhouses. Any costs that may be incurred in preventing spillage shall be taken into the account in the Contractor's bid price for levee work as no additional payment will be made.

3-06 QUANTITY SURVEYS

The Contractor will be responsible for making original and final surveys to be used in the computation of quantities for the determination of the contract price under Bid Item 4, Dredging; Bid Item 5, Levee Degrading; and Bid Item 6, Levee Raising. All quantity surveys shall be made under the direction of a representative of the Engineer.

Cross-sections to be used for the purposes of quantity computations are to be taken at a maximum of 50 feet along the baseline. Soundings and/or level rod readings are to be taken at a maximum of 10-foot intervals normal to the baseline. Horizontal distances will be measured to the nearest foot and elevations to the nearest tenth of a foot. Soundings for the original and final quantity surveys are to be taken with a twelve pound mushroom weight having a six-inch diameter base.

A segment shall hereby be defined as a minimum length of 250 feet of completed cross-section as detailed in the contract drawings.

Original quantity surveys may be made at any time prior to the dredging of a particular segment. Final surveys will be made only after the Engineer's representative has determined that the work in a particular segment is completed.

3-07 MEASUREMENT AND ACCEPTANCE

The total amount of work to be paid for under Bid Item 4, Dredging; Bid Item 5, Levee Degrading; and Bid Item 6, Levee Raising, shall be measured in accordance with the Theoretical Sections described in Paragraph 3-03 of these Specifications.

Payment at the applicable unit price will be made when it is determined by the final quantity survey as described in Section 3-06, that a particular segment has been dredged to the required cross-section; in addition, profiles will be taken along each required toe of slope and at the centerline of the required cross-section to insure that the entire channel has been excavated to the proper elevation. These profiles are to be performed by the Contractor using electronic sounding equipment and under the direction of the Engineer's Representative. Only after all cross-sections and profiles for a particular segment are deemed acceptable by the Engineer will payment for that segment be made.

In order to insure the integrity of the completed segments, they will be limited by the following stipulation; the final quantity survey will not be made for payment on a segment until dredging operations are a minimum of 100 linear feet from that segment.

3-08 PAYMENT

3-08.1 Mobilization and Demobilization

All costs connected with the mobilization and demobilization of all of the Contractor's plant and equipment will be paid for at the contract lump sum price for this item, Bid Item No. 1. Sixty percent of this amount will be paid to the Contractor upon the completion of his mobilization at the work site. The remaining forty percent will be paid to the Contractor upon completion of his demobilization from the work site.

3-08.2 Dredging

Payment for Bid Item No. 4 will be made at the applicable contract unit price per cubic yard based upon quantity surveys and after acceptance of each particular segment. Payments for the dredging item will be made in accordance with Paragraphs 55 through 60, in Section A of the General Specifications and Section 3-03.1 of these Special Specifications.

3-08.3 Levee Degrading and Raising

Payment for Bid Item Nos. 5 and 6 will be made at the applicable contract unit price per cubic yard based upon quantity surveys and after acceptance of each particular segment. Payment for the levee degrading and raising items will be made in accordance with Paragraphs 55 through 60, in Section A of the General Specifications and Section 3-03.2 of these Special Specifications.

3-08.4 Silt Screens

There will be no direct payment for silt screens and, as such, will be included in Bid Item No. 4, Dredging.

3-09 REPORTING REQUIREMENTS

The Contractor will be required to prepare a daily report of operations and furnish copies to the Engineer's Representative. Further reporting instructions will be furnished at a preconstruction conference.

SECTION 4
STEEL SHEET PILING

4-01 SCOPE

The work covered by this section consists of furnishing all plant, equipment, labor and materials and performing all operations in connection with the installation of steel sheet piling in accordance with these specifications and applicable drawings.

4-02 APPLICABLE PUBLICATIONS

The following American Society for Testing and Materials (ASTM) standards of the issues listed below, but referred to thereafter by basic designation only, form a part of this specification to the extent indicated by the references thereto:

- | | |
|-------|--|
| A 328 | PZ-22, PZ-27 and PZ-35 Sheet Piling |
| A 36 | H-Piles for Pile-Braced Wall, Angles for Fabricated Sheet Pile Sections, Tie-Back Rods, Plates and Fasteners |
| A 153 | Zinc (Hot-Dip Galvanized) Coating for Tie-Back Rods, Plates and Fasteners |
| A 325 | Bolts for Fabricated Sheet Pile Sections |

4-03 SUBMITTALS

4-03.1 Equipment Descriptions

The Contractor shall submit complete descriptions of pile driving equipment, including hammers, extractors, protecting caps and other appurtenances to the Engineer for approval prior to commencement of work.

4-03.2 Certificate

The Contractor shall furnish the Sewerage and Water Board's Engineers a certificate showing that piling furnished has the required interlock strength as determined by test results of two representative test specimens, approximately 3 inches long, per heat. The certificate shall indicate piling type, dimensions and section properties. Piling shall not be delivered to the site prior to the receipt by the Contractor of a written approval from the Sewerage and Water Board's Engineers.

4-04 MATERIALS

Steel for sheet piling shall conform to the requirements of ASTM A 328. Special fabricated sections shall be fabricated from angles or bent plates conforming to the requirements of ASTM A 36. High-strength bolts (ASTM A 325) shall be used for the fabricated section. Sheet piling, including special fabricated sections, shall be of the type indicated on the drawings, have a nominal web thickness not less than shown in the following table and be of a design such that when in place they will be continuously interlocked throughout their entire length. All piling shall be provided with standard pulling holes located approximately 4 inches below the top of the pile, unless otherwise shown or directed. Piling shall have the properties equivalent to those listed in the following table.

Type of Section	Nominal Web Thickness (Inches)	Section Modulus Per Lin Ft of Wall (In)	Weight Per Sq Ft of Wall (Lbs)	Weight Per Lin Ft of Pile (Lbs)
PZ 22	3/8	18.1	22	40.3
PZ 27	3/8	30.2	27	40.5
PZ 35	1/2	48.5	35	66.0

4-05 INSTALLATION

4-05.1 Placing and Driving

4-05.1.1 Placing

Piling shall be carefully located as shown on the drawings or as directed by the Sewerage and Water Board Engineers. Piles shall be placed in a plumb position with each pile interlocked with adjoining piles for its entire length, so as to form a continuous diaphragm throughout the length of each run of wall. Interlocks shall be properly engaged with the thumb of each pile gripped by the thumb and finger of the adjacent pile. All piles shall be placed as true to line as possible. Suitable temporary wales or guide structures shall be provided to insure that the piles are driven to correct alignment.

4-05.1.2 Driving

All piles shall be driven to depths shown on the drawings and shall extend to the elevation indicated for the top of piles. A tolerance of 3 inches above the indicated top elevation will be permitted. Piles shall be driven by approved methods in such manner as not to subject the piles to serious damage and to insure proper interlocking throughout the length of the piles. Pile hammers shall be maintained in proper alignment during driving operations by use of suitable leads or by guides attached to the hammer. A protecting cap shall be employed in driving, when required, to prevent damage to the tops of piles. All piles shall be driven without the aid of a water jet unless otherwise authorized. Adequate precautions shall be taken to insure that piles are driven plumb. If at any time the forward or leading edge of the pile wall is found to be out of plumb in the plane of the wall, the piles already assembled and partly driven shall be driven to full depth and the Contractor shall provide and drive tapered piles to interlock with the out of plumb leading edge or take other corrective measures to insure the plumbness of succeeding piles. The maximum permissible taper for any tapered pile will be one-eighth of an inch per foot of length. Each run of piling shall be driven to grade progressively from the start and no pile shall be driven to a lower grade than those behind it in the same run except when the piles behind it cannot be driven deeper. If the pile next to the one being driven tends to follow below final grade, it may be pinned to the next adjacent pile. There will be no direct payment for the additional labor and materials necessitated by such changes. Piles driven out of innerlock with adjacent piles or otherwise damaged shall be removed and replaced by new piles at the Contractor's expense.

4-05.2 Cutting and Splicing

Piles in excess of the specified tolerance shall be cut off to required grade. Piles driven below the elevations indicated from the top of piles and piles which because of damaged heads have been cut off to permit further driving, and are then too short to reach the required top elevation, shall be extended to the required elevation by welding an additional length, when directed, without cost to the Sewerage and Water Board. Should splicing of piles be necessary, the splice shall be made by an approved butt weld making full penetration of the web. Piles adjoining spliced piles shall be full length piles. The Contractor shall trim the tops of piles excessively damaged during driving, when directed to do so, at no cost to the Sewerage and Water Board. Cut-offs shall become the property of the Contractor and shall be removed from the work. The Contractor may cut holes in the piles for bolts, rods, drains, or utilities at locations and of sizes shown on the drawings or as directed. All cutting shall be done in a neat and workmanlike manner. Bolt holes shall be drilled or may be burned and reamed in place by approved methods which will not damage remaining metal. Holes, other than bolt holes, shall be reasonably smooth and of proper size for rods or other items to be inserted.

4-05.3 Pulling and Re-driving

The Contractor may be required to pull certain selected piles after driving, for test and inspection, to determine the conditions of the piles. Any pile so pulled and found to be damaged to such extent as would impair its usefulness in the structure shall be removed from the work and the Contractor shall furnish and drive a new pile to replace the damaged pile. Piles pulled and found to be in a satisfactory condition shall be redriven.

4-05.4 Coal Tar Epoxy Polyamide Painting

All sheet piling, with the exception of that paid under Bid Item No. 10, "Sheet Pile Wall (Orleans) Sta. 540+86* to Sta. 545+83", and the four (4) sheets of PZ 35 required under Bid Item No. 19, "Construction of Headwall Structure and Concrete Wall", shall receive Coal Tar Epoxy Paint for the upper 10 feet of the pile.

Coal Tar Epoxy Polyamide Painting shall conform to La. Std. Spec. 1008.08 and Corps of Engineers Specification C-200.

4-06 MEASUREMENT AND PAYMENT

4-06.1 Measurement

The length of any pile directed to be pulled and redriven will be measured to the nearest tenth of a linear foot.

* Stationing Refers to Baseline "B".

4-06.2 Payment

4-06.2.1 Sheet Piling

Payment for steel sheet piling quantities will be made at the applicable lump sum price for Bid Item No. 7, Tied-Back Wall (Jefferson) Sta. 541+14 to Sta. 549+67; Bid Item No. 8, Tied-Back Wall (Jefferson) Sta. 549+67 to Sta. 552+69; Bid Item No. 9, Tied-Back Wall (Orleans) Sta. 539+85* to Sta. 540+86*; Bid Item No. 10, Sheet Pile Wall (Orleans) Sta. 540+86* to Sta. 545+83" (Note the break in sheet pile wall at the 60" diameter concrete pipes); Bid Item No. 11, Floodwall (Orleans) Sta. 545+83 to Sta. 552+15; and Bid Item No. 12, Pile-Braced Wall (Orleans). The 72-foot floodwall along the Orleans East-West Return Levee will be paid under Bid Item No. 11. The four (4) sheets of PZ 35 sheet pile adjacent to the 60" diameter concrete pipes on the Orleans side, will be paid under Bid Item No. 19, Construction of Headwall Structure and Concrete Wall, per lump sum. Prices shall include, as required, all costs of furnishing, driving, cutting holes, painting, anchor piles, bracing piles, tie rods, treated timber, treated timber piling, connecting hardware, concrete caps, concrete for anchors, and all other material and work incident thereto.

4-06.2.2 Pulled Piles

Piles which are directed to be pulled and found to be in good condition will be paid for under Bid Item No. 23 at the contract unit price per linear foot for furnishing and driving the pile in its original position plus an equal amount for the cost of pulling. Such pulled piles when redriven will be paid for at 50 percent of the applicable contract price for that portion of the pile redriven below cut off elevation. This price constitutes payment for redriving only; the cost of furnishing, initial driving and pulling the piles is to be paid for as specified above. When piles are pulled and found to be damaged, no payment will be made for originally furnishing and driving such piles, nor for the operation of pulling. Piles replacing damaged piles will be paid for at the contract prices for the lengths driven.

*Stationing Refers to Baseline "B".

SECTION 5
TIMBER AND TIMBER PRESERVATIVE

5-01 STRUCTURAL TIMBER AND LUMBER

The Contractor shall have the option of providing either of the two species of wood specified below using the treatment methods outlined.

5-01.1 Southern Pine Timber

Referring to the latest Standard Grading Rules for Southern Pine Lumber, as published by the Southern Pine Inspection Bureau, Southern Pine lumber shall be furnished in grades with definite unit working stresses assigned as indicated for grade of lumber required.

(1) All timber associated with the boat slips and loading dock, excluding any required timber wales, shall be Grade No. 1 Dense SR Timbers.

(2) Timber wales shall be Grade No. 1 SR Timbers.

5-01.2 Douglas Fir Timber

Referring to the latest Standard Grading Rules for Western Lumber, Douglas Fir lumber shall be furnished in accordance with the following:

(1) All timber associated with the boat slips and loading dock, excluding any required timber wales, shall conform to Section 70.10, Select Structural. Design values shall be in accordance with Table 4, page 176, "Recommended Design Values in Pounds Per Square Inch".

(2) Timber wales shall conform to Section 70.11, Grade 1. Unless otherwise specified, design values shall be in accordance with Table 4, page 176, "Recommended Design Values in Pounds Per Square Inch".

5-02 TIMBER PILING

Timber piles shall be Southern Yellow Pine or Douglas Fir and shall conform to ASTM Designation: D25.

5-03 TIMBER PRESERVATIVE

The type preservatives to be used are as follows:

(1) Piles and Wales

Creosote Coal-Tar Solution - AWPA P12 for marine treatment. The ratio shall be 80 percent creosote oil and 20 percent coal-tar.

(2) All Other Timber

Chromated Copper Arsenate (CCA) - AWPA P5, Type B or C.

5-04 TREATMENT

5-04.1 General

All materials shall be treated according to current AWPA Standard Specifications for Preservative Treatment by Pressure Processes, modified as follows:

- Timber and Lumber..... C1 and C2
- Piles..... C1 and C3

Air-dried timber shall be steamed prior to treatment for a minimum of 6 hours.

Kiln-dried timber shall be steamed prior to treatment for a minimum of 2 hours. Material treated with Chromated Copper Arsenate (CCA) must be conditioned by Kiln drying prior to treatment.

5-04.2 Amount of Preservative

For acceptance purposes, the net retention in any charge by gage shall not be less than 100 percent of the specified quantity of preservative; and for verification, the net retention in any charge by random assay shall not be less than 85 percent of the quantity specified. If it is found necessary for the Sewerage and Water Board to use assay as the sole acceptance criteria, then the retention shall be at least 90 percent of the specified quantity of preservative. The minimum amount of preservative retained shall be as follows:

<u>Material</u>	<u>Min. Net Retention of Preservative Per Cu. Ft. of Wood (Lbs.)</u>	
	<u>Creosote - Coal Tar</u>	<u>CCA</u>
Southern Yellow Pine or Douglas Fir :		
Piles	20	-
Timber for Wales	20	-
All Other Timber	-	2.5

5-05 TIMBER HARDWARE

Bolts shall conform to ASTM Designation: A307. Washers shall be cast ogee grey iron or malleable castings.

Machine bolts shall have square heads and nuts. Nails shall be cut wire or boat spikes. All hardware shall be galvanized in accordance with ASTM Designation: A153.

5-06 MEASUREMENT AND PAYMENT

Cost of wales, anchor piles and hardware associated with the tied-back sheet pile walls shall be paid under Bid Item Nos. 7 through 9, per lump sum.

Cost of timber, piles and hardware associated with the boat slips, including the required wales, shall be measured and paid in accordance with paragraph 9-03.3 of these specifications.

Treated timber piles for the headwall structure and concrete wall, on the Orleans side, at the 60" diameter concrete pipes, shall be paid under Bid Item No. 19, per lump sum.

SECTION 6
SITE CAST CONCRETE

6-01 RELATED WORK SPECIFIED ELSEWHERE

Reinforcing Steel: Section C - Sewerage and Water Board Specifications.

6-02 REFERENCE STANDARDS

6-02.1 American Concrete Institute (ACI) Standards.

ACI 211.1-77 Recommended Practice for Selecting
(CRD-C99) Proportions for Normal Weight and Heavyweight Concrete

ACI 214-77 Recommended Practice for Evaluation of
Compression Test Results of Field Concrete

ACI 309-72 Recommended Practice for Consolidation of
Concrete

6-02.2 American Society for Testing and Materials (ASTM) with
Corresponding CRD Standard Indicated Where Available.

C 31-69(R-75) (CRD-C 11) (1975)	Making and Curing Concrete Test Specimens in the Field
C 33-80 (CRD-C 133)	Concrete Aggregates
C 39-72 (CRD-C 14) (1979)	Compressive Strength of Cylindrical Concrete Specimens
C 70-79 (CRD-C 111)	Surface Moisture in Fine Aggregate
C 94-80 (CRD-C 31)	Ready-Mixed Concrete
C 125-79a (CRD-C 43)	Terms Relating to Concrete and Concrete Aggregates
C 135-66 (1976)	True Specific Gravity of Refractory Material by Water Immersion
C 126-76 (CRD-C 103)	Sieve or Screen Analysis of Fine and Coarse Aggregates
C 143-78 (CRD-C 5)	Slump of Portland Cement
C 150-80 (CRD-C 201)	Portland Cement
C 171-69 (CRD-C 310) (1975)	Sheet Materials for Curing Concrete

C 172-71 (CRD-C 4) (1977)	Sampling Fresh Concrete
C 192-76 (CRD-C 10)	Making and Curing Concrete Test Specimens in the Laboratory
C 231-78 (CRD-C 41)	Air Content of Freshly Mixed Concrete by the Pressure Method
C 494-79 (CRD-C 87)	Chemical Admixtures for Concrete
C 566-67 (CRD-C 113)	Total Moisture Content of Aggregate by Drying
C 595-79 (CRD-C 203)	Blended Hydraulic Cement
D 75-71 (CRD-C 155) (1978)	Sampling Aggregates
E 329-77 (CRD-C 500)	Inspection and Testing Agencies for Concrete, Steel and Bituminous Materials as Used in Construction

6-02.3 Concrete Plant Manufacturer's Bureau (CPMB).

6th Edition (CRD-C 95) (Revised Dec. 1, 1977)	Concrete Plant Standards
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6-02.4 Federal Specifications (Fed. Specs.).

SS-S-00210	Sealing Compound
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6-02.5 National Bureau of Standards (NBS) Handbook.

44 Specifications, Tolerance and Other Technical Requirements for Commercial Weighing and Measuring Devices (4th Edition 1971 Replacement Sheets)

6-02.6 U.S. Army Corps of Engineers Handbook for Cement and Concrete (CRD).

CRD-C 13-79	Air Entraining Admixture for Concrete
CRD-C 55-78	Concrete Mixer Performance
CRD-C 100-75	Concrete Aggregate and Aggregate Sources and Selection of Material for Testing

CRD-C 112-69

Surface Moisture in Aggregate by
Water Displacement

CRD-C 400-63

Water for Use in Mixing or Curing
Concrete

6-02.7 Louisiana Standard Specifications for Roads and Bridges,
1982 Edition, State of Louisiana Department of Transportation and
Development. (LaDOTD).

1003.02

Coarse and Fine Aggregate for
Portland Cement Concrete and Mortar

6-03 QUALITY CONTROL

6-03.1 Preconstruction Testing. An independent Testing
Laboratory will sample and test the following:

Air-entraining admixture
Water-reducing admixture
Aggregates

At least 30 days in advance of concrete placement the Contractor will notify the engineer of the source of materials, along with sampling location, brand name, type and quantity to be used in the manufacture and/or curing of the concrete. Sampling and testing will be performed by an independent testing laboratory selected by the Sewerage and Water Board except as otherwise specified. No material shall be used until notice has been given by the Engineer that test results are satisfactory and all movement of materials after sampling shall be as directed.

6-03.1.1 Air-entraining admixture which has been in storage at the project site for longer than 6 months or which has been subjected to freezing will be retested at the expense of the Contractor when directed by the Engineer and shall be rejected if test results are not satisfactory.

6-03.1.2 Testing. The Sewerage and Water Board will sample and test aggregates and concrete at the expense of the Sewerage and Water Board to determine compliance with the specifications. The Contractor shall provide facilities and labor as may be necessary for procurement of representative test samples. When the Contractor proposes to reduce concrete mixing time, uniformity tests at reduced mixing time will be made by the Sewerage and Water Board at the Contractor's expense. Samples of aggregates will be obtained at the point of batching. Concrete will be sampled in accordance with ASTM C 172. Slump and air content will be determined in accordance with ASTM C 143 and ASTM C 231, respectively. Compression test specimens will be made and cured in accordance with ASTM C 31 and compression test specimens testing accordance with ASTM C 39. Samples for strength tests of each class of concrete placed each day will be taken not less than once each day, nor less than once each 150 cu. yd. of concrete, nor less than once

for each 5,000 sq. ft. of surface area of one side of slabs or walls. Three specimens will be made from each sample, two will be tested at 28 days for acceptance and one will be tested at 7 days for information. The acceptance test results will be the average of the strengths of the two specimens tested at 28 days.

6-04 EVALUATION AND ACCEPTANCE

6-04.1 Concrete. The strength of the concrete will be considered satisfactory so long as the average of all sets of three consecutive test results equal or exceed the required specified strength f'_c and no individual test result falls below the specified strength f'_c by more than 500 pounds per square inch. Structural analysis or additional testing may be required at the Contractor's expense when the strength of the concrete in the structure is considered potentially deficient. Concrete work judged inadequate by structural analysis or by results of tests shall be reforced with additional construction as directed by the Engineer or shall be replaced at the Contractor's expense.

6-04.2 Construction Tolerances. Variation in alignment, grade and dimensions of the structures from the established alignment, and grade and dimensions shown on the drawings shall be within the tolerances specified in Table 1:

TABLE 1

CONSTRUCTION TOLERANCES FOR REINFORCED CONCRETE STRUCTURE

(1)	Variations from the plumb:	In any 10 feet of length...1/4-inch
	a. In the lines and sur- faces of columns, walls and in arrises	Maximum for entire length....1-inch
	b. For exposed control- joint grooves, and other conspicuous lines	In any 20 feet of length.....1/4-inch Maximum for entire length..1/2-inch
(2)	Variation from the level or from the grades indi- cated on the drawings:	In any 10 feet of length...1/4-inch In any 20 feet of length.....3/8-inch
	a. In slabs	Maximum for entire length..3/4-inch
(3)	Variation of the linear wall lines from established position in plan	In any 20 feet.....1/2-inch Maximum.....1-inch
(4)	Variation in the sizes and locations of sleeves, and wall opening	Minus.....1/4-inch Plus.....1/2-inch
(5)	Variation in cross- sectional dimensions of columns and beams and in the thickness of slabs and walls	Minus.....1/4-inch Plus.....1/2-inch
(6)	Footings:	
	a. Variation of dimen- sions in plan	Minus.....1/2-inch Plus.....2-inches when formed or plus 3-inches when placed against unformed excavation.
	b. Misplacement of eccentricity	2 percent of the footing width in the direction of misplacement but not more than.....2-inches
	c. Reduction in thickness	Minus.....5 percent of speci- fied thick- ness

6-04.3 Surface Requirements. The surface for the classes of finish defined by Section 805.13 of the Louisiana Standard Specifications For Roads and Bridges shall be as hereinafter specified. Allowable irregularities are designated "abrupt" or "gradual" for purposes of providing for surface variations. Offsets resulting from displaced, misplaced or mismatched forms, or sheathing, or by loose knots in sheathing or other similar form defects, shall be considered "abrupt" irregularities. Irregularities resulting from warping, curvature, shall be considered "gradual" irregularities. "Gradual" irregularities will be checked for compliance with the prescribed limits with a 5-ft. template, consisting of straightedge for plane surfaces and a shaped template for curved or warped surfaces. In measuring irregularities, the straightedge or template may be placed anywhere on the surface in any direction, with the edge held parallel to the intended surface.

<u>Item</u>	<u>Class of Finish</u>	<u>Irregularities</u>	
		<u>Abrupt, inches</u>	<u>Gradual, inches</u>
Wall Cap	1	1/8	1/4
Sidewalk	7	1/8	1/4
Bridge Deck	6	1/8	1/8

6-04.4 Appearance. The following surfaces which are permanently exposed shall be cleaned if stained or otherwise discolored, by a method which does not harm the concrete and which is approved by the Engineer.

All walls, slabs and other structures.

6-05 SUBMITTALS

6-05.1 Test Reports.

6-05.1.1 Aggregates. Test reports of aggregates shall be submitted from a laboratory complying with ASTM E 329. Tests to be conducted shall be those required to demonstrate that the aggregate conforms to Louisiana Department of Transportation and Development (LaDOTD) Standards. No aggregate shall be used until notice of acceptance has been given by the Engineer.

6-05.1.2 Concrete Mixture Proportions shall be submitted for approval. The proportions of all ingredients and nominal maximum coarse size that will be used in the manufacture of each quality of concrete shall be stated. The submission shall be accompanied by test reports from a laboratory complying with ASTM E 329 attesting that proportions thus selected will produce concrete of the qualities indicated. No substitution shall be made in the source or type of materials used in the work without additional tests to show that the new materials and quality of concrete are satisfactory.

6-05.1.3 Cement will be accepted on the basis of manufacturer's certification of compliance, accompanied by mill test reports that materials meet the requirements of the specification under which it is

furnished. Certification and mill test reports shall identify the particular lot furnished. No cement shall be used until notice of acceptance has been given by the Engineer. Cement will be subjected to check testing from samples obtained at the mill, at transfer points or at the project site, as scheduled by the Engineer, and such sampling will be by or under the supervision of the Sewerage and Water Board at its expense. Material not meeting specifications shall be promptly removed from the site of work.

6-05.2 Review of Plant, Equipment and Methods.

6-05.2.1 Batch Plant. Details of the data on concrete plant shall be submitted for review by the Engineer.

6-05.2.2 Mixers. The make, type and capacity of concrete plant shall be submitted for review by the Engineer.

6-05.2.3 Conveying Equipment. The methods and equipment for transporting, handling, and depositing the concrete shall be submitted for review by the Engineer.

6-05.2.4 Placing. All placing equipment and methods shall be submitted for review by the Engineer.

6-05.2.5 Joint Clean-Up. The method and equipment for joint clean-up shall be submitted for review by the Engineer. Method of waste disposal for any method proposed for joint clean-up shall be approved by the Engineer.

6-05.2.6 Curing. The curing medium and methods to be used shall be submitted for review by the Engineer.

6-05.2.7 Cold-weather Requirements. If concrete is proposed to be placed under cold weather conditions the materials, methods and protection proposed to accomplish it shall be approved by the Engineer.

6-05.2.8 Hot-weather Requirements. If concrete is proposed to be placed under hot weather conditions the materials and methods proposed to accomplish it shall be approved by the Engineer.

PART 2 - PRODUCTS

6-06 MATERIALS

6-06.1 Cement shall be portland cement and shall conform to appropriate specifications listed below:

6-06.1.1 Portland Cement. ASTM C 150, Type I or II except that the maximum amount of C₃A in Type 1 cement shall be 15% low alkali.

6-06.1.2 High-Early-Strength Portland Cement. ASTM C 150, Type III used only when specifically approved in writing.

6-06.2 Aggregates shall be produced from the sources in SP-19 or from another source when approved in accordance with SP-19. Fine and coarse aggregates will conform to the grading requirements of Section 1003 Paragraph 1003.02 of the Louisiana Department of Transportation and Development (LaDOTD) Standard Specifications for Roads and Bridges. Quality of all aggregates shall conform to the requirements of Section 1003 of LaDOTD Standard Specifications.

6-06.3 Admixtures to be used, when required or permitted shall conform to the appropriate specification listed below:

6-06.3.1 Air-entraining Admixture: CRD-C 13.

6-06.3.2 Water-reducing or retarding admixtures ASTM C 494, Type A, B or D.

6-06.4 Water for mixing shall be fresh, clean and drinkable, except that undrinkable water may be used if it meets the requirements of CRD-C 400. Water for curing shall not contain any substance that is injurious to or stains the concrete.

6-07 PROPORTIONING

6-07.1 Quality and Location. Concrete of various qualities indicated and as required under other sections shall be proportioned for use in various structures or portions of structures as follows:

6-07.1.1 Strength. Specified compressive strength f'_c @ 28 days shall be 3500 psi for all structures with concrete.

6-07.1.2 Maximum Water - Cement Ratio. Maximum water cement ratio shall be 0.55 for all concrete structures.

6-07.2 Nominal Maximum size coarse aggregate shall be 1-1/2 inches except 1-inch nominal maximum size coarse aggregate shall be used when any of the following conditions exist: The narrowest dimension between sides of forms is less than 7-1/2 inches, the depth of the slab is less than 4-1/2 inches or when the minimum clear spacing between reinforcing is less than 2 inches.

6-07.3 Air Content as determined by ASTM C 231 shall be 5.0 ± 1.5 percent except that when the nominal maximum size coarse aggregate is 3/4-inch it will be 6.0 ± 1.5 percent.

6-07.4 Slump. The slump as determined by ASTM C-143 shall have a minimum limit of 2-inches and a maximum limit of 4-inches for all concrete.

6-07.5 Concrete Proportioning. Trial design batches and testing requirements for various qualities of concrete specified shall be the responsibility of the Contractor. Samples of approved aggregates shall be obtained in accordance with the requirements of ASTM D 75. Samples of materials other than aggregate shall be representative of those proposed for the project and shall be accompanied by manufacturer's test reports indicating compliance with applicable specified requirements. Trial mixtures having proportions, consistencies and air content suitable for the work shall be made based on ACI Standard 211.1, using at least three different water-cement ratio which will produce a range of strength encompassing those required for the work. Trial mixtures shall be designed for maximum permitted slump and air content. The temperature of concrete in each trial batch shall be reported. For each water-cement ratio at least three test cylinders for each test age shall be made and cured in accordance with ASTM C 192. They shall be tested at 7 and 28 days in accordance with ASTM C 39. From these test results a curve shall be plotted showing the relationship between water-cement ratio and strength.

6-07.6 Average Strength. For each portion of the structure, proportions shall be selected so that the maximum permitted water-cement ratio is not exceed and so as to produce an average strength f_{cr} exceeding the specified strength f'_c by the amount indicated below. Where the production facility has a standard deviation record determined in accordance with ACI 214, based on 30 consecutive strength tests of similar mixture proportions as proposed, obtained within one year of the time when concrete placing is excepted, it shall be used in selecting average strength. The average strength used as the basis for selecting proportions shall exceed the specified strength f'_c by at least

350 psi if standard deviation is less than 300 psi
550 psi if standard deviation is 300 to 450 psi
750 psi if standard deviation is 450 to 600 psi
900 psi if standard deviation is 600 to 750 psi

If the standard deviation exceeds 750 psi or if a standard deviation record is not available, proportions shall be selected to produce an average strength at least 1,000 psi greater than the specified strength.

6-08 PRODUCTION OF CONCRETE

6-08.1 Capacity. The batching and mixing equipment shall have a capacity of at least 30 cubic yards per hour.

6-08.2 Batching Plant shall conform to the requirements of the Concrete Plant Standards of CPMB and as specified; however, rating plates attached to bath plant equipment are not required.

6-08.2.1 Equipment. The batching controls shall be semi-automatic or automatic. The semi-automatic batching system shall be provided with interlocks such that the discharge device cannot be actuated until the indicated material is within the applicable tolerances. Separate bins or compartments shall be provided for each size

group of aggregate and cement. Aggregate shall not be weighed in the same batcher with cement. If measured by weight, water shall not be weighed cumulatively with another ingredient. Water batcher filling and discharging valves shall be so interlocked that the discharge valve cannot be opened before the filling valve is fully closed. An accurate mechanical device for measuring and dispensing each admixture shall be provided. Each dispenser shall be interlocked with the batching and discharging operation of the water so that each admixture is separately batched and discharged automatically in a manner to obtain uniform distribution throughout the batch in the specified mixing period. Where use of truck mixers make this requirement impracticable, the admixture dispensers shall be interlocked with the same batcher. Admixtures will not be combined prior to the introduction in water or sand. The plant shall be arranged so as to facilitate the inspection of all operations at all times. Suitable facilities shall be provided for obtaining representative samples of aggregates from each bin or compartment.

6-08.2.2 Scales. The weighing equipment shall conform to the applicable requirements of NBS Handbook 44, except that the accuracy shall be plus or minus 0.2 percent of scale capacity. The Contractor shall provide standard test weights and any other auxiliary equipment required for checking the operating performance of each scale or other measuring devices. The tests shall be made at the frequency required in 3D-16.2.4 and in the presence of a Sewerage and Water Board inspector.

6-08.2.3 Batching Tolerances.

6-08.2.3.1 Weighing Tolerances. Whichever of the following tolerances is greater shall apply, based on required scale reading.

<u>Material</u>	<u>Percent Required Weight</u>	<u>Percent of Scale Capacity</u>
Cement	+1	+0.3
Aggregate	+2	+0.3
Water	+1	+0.3
Admixture	+3	+0.3

6-08.2.3.2 Volumetric Tolerances. For volumetric batching equipment the following tolerances shall apply to the required volume of material being batched:

- Water: Plus or minus 1 percent.
- Admixtures: Plus or minus 3 percent.

6-08.2.4 Moisture Control. The plant shall be capable of ready adjustment to compensate for the varying moisture contents of the aggregates, and to change the weights of the materials being batched. An electric moisture meter complying with the provisions of CRD-C 143 shall be provided for measuring of moisture in the fine aggregate. The sensing element shall be arranged so that measurement is made near the batcher charging gate of the sand bin or in the sand batcher.

6-08.3 Mixers.

6-08.3.1 General. The mixers shall not be charged in excess of the capacity recommended by the manufacturer. The mixers shall be operated at the drum or mixing blade speed designated on the manufacturer's data plate. The mixers shall be maintained in satisfactory operating condition, and the mixer drum shall be kept free of hardened concrete. Should any mixer at any time produce unsatisfactory results, its use shall be promptly discontinued until it is required.

6-08.3.2 Concrete plant mixers shall be tilting, non-tilting, horizontal shaft or vertical-shaft type and shall be provided with an acceptable device to lock the discharge mechanism until the required mixing time has elapsed. The mixing time and uniformity shall conform to 3D-8.3.2.1.

6-08.3.2.1 Mixing Time and Uniformity. In the absence of uniformity data from concrete mixers, the mixing time for each batch after all solid materials are in the mixer shall be one minute for mixers having a capacity of one cubic yard, provided that all of the mixing water is introduced before one-fourth of the mixing time is elapsed. For mixers of greater capacity, this minimum time shall be increased 15 seconds for each additional cubic yard or fraction thereof. These mixing times are predicated on operation at designated speed and proper introduction of materials into the mixer. The mixing time will be increased to secure the required uniformity when the average variability index for the tests performed in accordance with 3D-16.2.12.1 is less than any of the following uniformity requirements:

<u>Test</u>	<u>Variability Index</u>
Water content, % by wt.	91.5
Coarse aggregate content, % by wt.	90.6
Unit - weight of air-free mortar, % by wt.	98.5
Cement content of dried mortar, % wt.	82.5

The mixing time may be reduced, when requested by the Contractor, to the minimum time required to meet all the uniformity requirements. Mixer performance tests in accordance with CRD-C 55 at reduced mixing times will be performed by the Sewerage and Water Board at the Contractor's expense.

6-08.3.3 Truck Mixers. Truck mixers, the mixing of concrete therein, and concrete uniformity, shall conform to the requirements of ASTM C-94. A truck mixer may be used either for complete mixing (transit-mixed) or to finish the partial mixing done in a stationary mixer (shrink-mixed). Each truck shall be equipped with two counters from which it will be possible to determine the number of revolutions at mixing speed and the number of revolutions at agitating speed. Truck mixers shall not be used to mix or to agitate concrete with greater than 1-1/2-inch nominal maximum size aggregate.

6-09 PREPARATION FOR PLACING

Embedded Items. Before placing concrete, care shall be taken to determine that all embedded items are firmly and securely fastened in place as indicated on the drawings, or required. Embedded items shall be free of oil and other foreign matter such as loose coatings or rust, paint and scale. The embedding of wood in concrete will be permitted only when specifically authorized or directed. Voids in sleeves, inserts and anchor slots shall be filled temporarily with readily removable materials to prevent the entry of concrete into the voids.

6-10 CONVEYING

6-10.1 General. Concrete shall be conveyed from mixer to forms as rapidly as practicable by methods which will prevent segregation or loss of ingredients. Any concrete transferred from one conveying device to another shall be passed through a hopper which is conical in shape and shall not be dropped vertically more than 5 feet, except where suitable equipment is provided to prevent segregation and where specifically authorized. Telephonic or other satisfactory means of rapid communication between the mixing plant and the forms in which concrete is being placed shall be provided and available for use by the Engineer.

6-10.2 Buckets. The interior hopper slope shall be not less than 60 degrees from the horizontal, the minimum dimension of the clear gate opening shall be at least 5 times the nominal maximum size aggregate and the area of the gate opening shall be not less than two square feet. The maximum dimension of the gate opening shall not be greater than twice the minimum dimension. The bucket gates shall be essentially grout tight when closed and may be manually, pneumatically or hydraulically operated except for buckets larger than 2 cubic yards shall not be manually operated. The design of the bucket shall provide means for positive regulation of the amount and rate of deposit of concrete in each dumping position.

6-10.3 Trucks. Truck mixers operating at agitating speed or truck agitators used for transporting plant-mixed concrete shall conform to the requirements of ASTM C-94. Non-agitating equipment may be used for transporting plant mixed concrete over a smooth road when hauling time is less than 15 minutes. Bodies of non-agitating equipment shall be smooth, watertight, metal containers equipped with gates that will permit the discharged of the concrete. Covers shall be provided for protection against the weather.

6-10.4 Chutes. When concrete can be placed directly from a truck mixer, agitator or non-agitating equipment, the chutes attached to this equipment may be used. A discharge deflector shall be used when required by the Engineer. Separate chutes and other similar equipment will not be permitted for conveying concrete except when specifically approved.

6-10.5 Belt Conveyors. Belt conveyors may be used when approved. Such conveyors shall be designed and operated to assure to uniform flow of concrete from mixer to final place of deposit without segregation of ingredients or loss of mortar and shall be provided with positive means for preventing segregation of the concrete at the transfer points and the point of placing.

6-10.6 Pump Placement. Concrete may be conveyed by positive displacement pump when approved. The pumping equipment shall be piston or squeeze pressure type. The pipeline shall be rigid steel pipe or heavy duty flexible hose. The inside diameter of the pipe shall be at least three times the nominal maximum size coarse aggregate in the concrete mixture to be pumped but not less than 4 inches. The maximum size coarse aggregate will not be reduced to accommodate the pumps. The distance to be pumped shall not exceed limits recommended by the pump manufacturer. The concrete shall be supplied to the concrete pump continuously. When pumping is completed, concrete remaining in the pipeline shall be ejected without contamination of concrete in place. After each operation, equipment shall be thoroughly cleaned, and flushing water shall be wasted outside of the forms.

6-11 PLACING

6-11.1 General. Concrete placement will not be permitted when, in the opinion of the Engineer, weather conditions prevent proper placement and consolidation. Concrete shall be deposited as close as possible to its final position in the forms, and in so depositing there shall be no vertical drop greater than 5 feet except where suitable equipment is provided to prevent segregation and where specifically authorized. Depositing of the concrete shall be so regulated that it may be effectively consolidated in horizontal layers 1-1/2 feet or less in thickness with a minimum of lateral movement. The amount deposited in each location shall be that which can be readily and thoroughly consolidated. The surfaces of construction joints shall be kept continuously wet for the first twelve hours during the twenty-four hour period prior to placing concrete. Free water shall be removed prior to placement of concrete. Sufficient placing capacity shall be provided so that concrete placement can be kept plastic and free of cold joints while concrete is being placed.

6-11.2 Time Interval Between Mixing and Placing. Concrete shall be placed within thirty minutes after it has been mixed except when conveyed by agitating equipment. When concrete is truck mixed or when a truck mixer or agitator is used for transporting concrete mixed by a concrete plant mixer, the concrete shall be delivered to the site of work and discharge shall be completed within 1-1/2 hours after introduction of the cement to the aggregates except when the concrete temperature exceeds 85°F, the discharge shall be completed within 45 minutes. When the length of haul makes it impossible to deliver truck mixed concrete within these time limits, batching of cement and a portion of the mixing water shall be delayed until the truck mixer is at or near the construction site. Not more than 80 percent of the water and all other materials except cement shall be batched at the distant batch plant and transported to the cement batcher without mixing. Concrete shall be placed within 15 minutes after it has been discharged.

6-11.3 Cold-Weather Placing. Concrete shall not be placed when it is likely to be subjected to freezing temperatures before the expiration of the curing period. The ambient temperature of the space adjacent to the concrete placement and surfaces to review

concrete shall be maintained at not less than 40°F. The placing temperature of the concrete having a minimum dimension less than 12 inches shall be between 60° and 75°F. The placing temperature of the concrete having a minimum dimension greater than 12 inches shall be between 50° and 75°F. Heating of the mixing water or aggregates will be required to regulate the concrete placing temperatures. Materials entering the mixer shall be free from ice, snow or frozen lumps. Salt, chemicals or other materials shall not be mixed with the concrete to prevent freezing.

6-11.4 Hot-Weather Placing. The concrete placing temperature shall not exceed 90°F. Cooling of the mixing water and/or aggregates will be required to obtain an adequate placing temperature. An approved retarder will be used to facilitate placing and finishing when the placing temperature reaches or exceeds 85°F. Steel forms and reinforcement shall be cooled prior to concrete placement when steel temperatures are greater than 120°F. Conveying and placing equipment shall be cooled if necessary to maintain proper concrete placing temperature.

6-11.5 Concrete on Earth Foundations. Earth surfaces upon which concrete is to be placed shall be clean, damp, and free from frost, ice, and standing or running water.

6-11.6 Consolidation. Immediately after placing, each layer of concrete shall be consolidated by internal vibrating equipment. Vibrator will not be used to transport concrete within the forms. Hand spading may be required if necessary with internal vibration along formed surfaces permanently exposed to view. The vibrating equipment shall at all times be adequate in number of units and concrete shall be consolidated by internal vibrating equipment. Vibrators will not be used to transport concrete within the forms. Hand spading may be required if necessary with internal vibration along formed surfaces permanently exposed to view. The vibrating equipment shall at all times be adequate in number of units and power of each unit to properly consolidate the concrete. A spare vibrator shall be kept on the job site during all concrete placing operations. Form or surface vibrators shall not be used unless specifically approved. Vibrators of the proper size, frequency and amplitude shall be used for the type of work being performed in conformance with the following requirements:

<u>Application</u>	<u>Head Diameter (inches)</u>	<u>Frequency VPM (min)</u>	<u>Amplitude (in.) (Min.)</u>
Thin walls, beams, etc.	1-1/4 - 2-1/2	9000	0.02
General construction	2 - 3-1/2	8000	0.025

The frequency and amplitude shall be within the range indicated in the table above. The vibrator shall be inserted vertically at uniform spacing over the entire area of placement. The distance between insertions shall be approximately 1-1/2 times the radius of action of the vibrator. The vibrator shall penetrate rapidly to the bottom of the layer and at least 6 inches into the preceding layer if such exists. It shall be held stationary until the concrete is consolidated and then withdrawn slowly.

6-12 REPAIR OF SURFACE DEFECTS

Within 24 hours after form removal, all fins and loose materials shall be removed and surface defects including tie holes shall be remedied and all honeycombed and other defective concrete shall be repaired. All unsound concrete shall be removed from defective areas. Defective areas larger than 36 square inches and deeper than steel or 4 inches shall be delineated in a rectangular shape by a saw cut a minimum depth of 1-inch and repaired with concrete replacement. Minor honeycomb and holes left by the removal of tie rods in all surfaces not to receive additional concrete shall be reamed or chipped and filled with dry pack mortar. If chipping is necessary the edges shall be perpendicular to the surface or slightly undercut. As determined by trial mixtures, the cement used in the mortar or concrete for all surfaces permanently exposed to view shall be a blend of portland cement and white cement properly proportioned so that the final color when cured will be the same as adjacent concrete. Temperature of the concrete, ambient air, replacement concrete or mortar during remedial work including curing shall be above 50°F. The prepared area shall be dampened, brush-coated with neat cement grout or with an approved epoxy resin, and filled with mortar or concrete. The mortar shall consist of 1 part cement to 2-1/2 parts fine aggregate. The quantity of mixing water shall be the minimum necessary obtain a uniform moisture. The mortar shall be remixed without addition of water until it obtains the stiffest consistency that will permit placing. Mortar shall be thoroughly compacted in place and struck off to adjacent concrete. Replacement cement shall be drier than the usual mixture and thoroughly tamped into place and finished. Forms shall be used if required. Metal tools shall not be used to finish permanently exposed surfaces. The patched areas shall be cured for seven days.

6-13 FINISHING UNFORMED SURFACES

6-13.1 General. The ambient temperature of spaces adjacent to surfaces being finished shall be not less than 50°F. All unformed surfaces that are not to be covered by additional concrete or backfill shall be finished to the elevation shown on the drawings. Surfaces to receive additional concrete or backfill shall be brought to elevation shown on the drawings and left true and regular. Exterior surfaces shall be sloped for drainage unless otherwise shown on the drawing or as directed. Joints shall be carefully made with a jointing tool. The finished surfaces shall be protected from stains or abrasions. Surfaces or edges likely to be injured during the construction period shall be protected from damage. Tolerance for a screeded finish shall be true planes within 3/8-inch in 10 feet as determined by a 10-foot straightedge placed anywhere on the slab in any direction. Tolerance for a floated finish shall be true planes within 1/4-inch in 10 feet as determined by a 10-foot straightedge placed anywhere on the slab in any direction. Tolerance for a troweled finish shall be true planes within 1/8-inch in 10 feet as determined by a 10-foot straightedge placed anywhere on the slab in any direction.

6-13.2 Float Finish. All unformed surfaces of concrete that are not to be covered by additional concrete or backfill, shall have a float finish unless a steel trowel finish is specified. Surfaces shall be screeded and darbied or bullfloated to bring the surface to the required finish level with no coarse aggregate visible. No cement or mortar shall be added to the surface during the finishing operation and no finishing operation shall be conducted until the water sheen has

disappeared. The concrete, while still green but sufficiently hardened to bear a man's weight without deep imprint, shall be floated to a true and even plane. Floating may be performed by use of hand or power driven equipment. Hand floats shall be made of magnesium or aluminum.

6-13.3 Trowel Finish. A steel trowel finish shall be applied to the wall caps. Concrete surfaces shall be finished with a float finish and after surface moisture has disappeared, the surface shall be steel-troweled to a smooth, even, dense finish free from blemishes including trowel marks.

6-14 CURING AND PROTECTION

6-14.1 General. All concrete shall be cured by an approved method for the period of time given below:

Type III portland cement	3 days
Type I portland cement	7 days
Type II portland cement	14 days

Immediately after placement, concrete shall be protected from premature drying, extremes in temperatures, rapid temperature change, mechanical injury, and injury from rain and flowing water. All materials and equipment needed for adequate curing and protection shall be available and at the placement site prior to start of concrete placement. Concrete shall be protected from the damaging effects of rain for 12 hours, flowing water for 14 days and direct rays of the sun for 3 days. All concrete shall be adequately protected from damage. No fire or excessive heat shall be permitted near or in direct contact with concrete at any time.

6-14.2 Moist Curing. Concrete moist-cured shall be maintained continuously (not periodically) wet for the entire curing period. If water or curing materials used stain or discolor concrete surfaces which are to be permanently exposed, they shall be cleaned. When wooden form sheathing is left in place during curing, the sheathing shall be kept wet at all times. Horizontal surfaces shall be cured by ponding, but covering with a minimum uniform thickness of 2 inches continuously saturated sand, or by covering with saturate non-staining burlap or cotton mats or sealed impervious sheet materials. The following exceptions are permitted:

(1) Horizontal construction joints may be allowed to dry for twelve hours immediately prior to placing of the following lift.

(2) Where insulation is approved for cold weather protection, all joints in the insulation shall be sealed to prevent moisture loss and maintained sealed throughout curing period.

6-14.3 Cold Weather. When the mean daily outdoor temperature is less than 40°F, the temperature of the concrete shall be maintained between 50°F and 70°F for the required curing period. In addition, during the period of protection removal, the air temperature adjacent

to the concrete surfaces shall be controlled so that concrete near the surface will not be subjected to a temperature differential of more than 25°F as determined by observation of ambient and concrete temperatures indicated by suitable thermometers furnished by the Sewerage and Water Board as required and installed adjacent to the concrete surface and 2 inches inside the surface of the concrete. The installation of the thermometers shall be made by the Contractor at such locations as may be directed.

6-14.4 Hot Weather. When the rate of evaporation of surface moisture, as determined by use of Fig. 2.1.5 of ACI 305, may reasonably be expected to exceed 0.2 lb. per sq. ft. per hour, provision for windbreaks, shading, fog spraying, or covering with a light colored material shall be made in advance of placement, and such protective measures shall be taken as quickly as finishing operations will allow.

6-15 FINISHING FORMED SURFACES

6-15.1 General. Surfaces, unless other type of finish is specified, shall be left with the texture imparted by the forms except defective surfaces shall be repaired in accordance with 3D-12. Other type of finishes shall be applied to the following structures or portions of structures:

<u>Type of Finish</u>	<u>Structure of Portion of Structure</u>
Waterproof Finish	All exposed vertical surfaces of concrete walls

Uniform color shall be maintained by use of only one mixture design without changes in materials or proportions for any structure or portion of structure which is exposed to view or on which a special finish is required. The form panels used to produce the finish shall be orderly in arrangement, with joints between panels planned in approved relation to opening, building corners and other architectural features. Forms shall not be reused if there is any evidence of surface wear or defects which would impair the quality of surface.

6-15.2 Waterproof Finish. This type of finish shall be applied where specified or as noted on the drawings. As approved by the Engineer and after all required patching, cleaning and correction of major imperfections have been completed, the concrete surface shall be given a waterproof finish as hereinafter described. The finish shall not be applied before the initial moist curing period is complete. The temperature of the air adjacent to the surface shall be not less than 50°F for 24 hours prior to and 24 hours following the application of the finish. If the temperature of the air adjacent to the surface is above 90°F, the surface shall be cooled prior to the application of the finish by hosing with clean water until it reaches a temperature of 85°F. The finish for any area shall be completed in the same day and the limits of a finished area shall be made at natural breaks in the finished surface.

The surface to be finished must be structurally sound, clean and free of dirt, form marks, loose mortar particles, paint, films, protective coatings, efflorescence, laitance, etc. the waterproof finish shall consist of dampening the surface ahead of the cementitious paint application with clean water. The cementitious paint shall be prepared by mixing a minimum of 25 pounds of paint power (color, ivory) conforming to Fed. Spec. TT-P-0035, per gallon of mixing liquid. The mixing liquid shall contain one acrylic bonding agent to three parts of clean water. The paint shall be applied in a minimum of two brush coats. Each coat shall be applied at a rate of 2 pounds of paint per square yard of surface. The applied coating shall be uniform, completely filling all pits, air bubbles, and surface voids.

6-16 CONTRACTOR QUALITY CONTROL.

6-16.1 General. The Contractor shall perform the inspection and tests described in 3D-16.2 and based upon the results of these inspections and tests he shall take the action required in 3D-16.3. Reports shall be submitted as required in 3D-16.3 and 3D-16.4.

6-16.2 Inspection Details and Frequency of Testing.

6-16.2.1 Fine Aggregate.

6-16.2.1.1 Grading. At least once during each shift in which concrete is being delivered, there shall be one sieve analysis and fineness modulus determination in accordance with ASTM C 136 and C 125, respectively, for the fine aggregate or for each fine aggregate, if it is batched in more than one size or classification. The location at which samples are taken may be selected by the Contractor as the most advantageous for control. However, the Contractor is responsible for delivering fine aggregate to the mixer within specification limits.

6-16.2.1.2 Moisture Content. There shall be, when in the opinion of the Engineer the electric moisture meter is not operating satisfactorily, at least four tests for moisture content in accordance with either ASTM C 70, C 566, or CRD-C 112 during each 8-hour period of mixing plant operation. The times for the tests shall be selected randomly within the 8-hour period. An additional test shall be made whenever the lump shown to be out of control or excessive variation in workability is reported by the placing foreman. When the electric moisture meter is operating satisfactorily, at least two direct measurements of moisture content shall be made per week to check the calibration of the meter.

6-16.2.2 Coarse Aggregate.

6-16.2.2.1 Grading. At least once during each shift concrete is being delivered, there shall be a sieve analysis in accordance with ASTM C 136 for each size group of coarse aggregate. The location at which samples are taken may be selected by the Contractor as the most advantageous for production control. However, the Contractor is responsible for delivering the aggregate to the mixer within specification limits. A test record of samples of aggregate taken shall show

the results of the 5 most recent tests including the current test. The Contractor may adopt limits for control coarser than the specification limits for sample taken other than the batch plant bins to allow for degradation during handling.

6-16.2.2.2 Moisture Content. A test for moisture content of each size of coarse aggregate shall be made at least once a shift. When two consecutive readings for smallest size coarse aggregate differ by more than 1.0 percent, frequency of testing shall be increased to that specified for fine aggregate in 6-16.2.1.2.

6-16.2.3 Deleterious Substances. When in the opinion of the Engineer, a problem exists in connection with deleterious substances in fine or coarse aggregates, tests shall be made in accordance with ASTM C 33. Testing frequency shall be not less than one per week.

6-16.2.4 Scales.

6-16.2.4.1 Weighting Accuracy. The accuracy of the scales shall be checked by test weights at least once a month for conformance with the applicable requirement of 3D-8.2.2. Such tests shall also be made whenever there are variations in properties of the fresh concrete which could result from batching errors.

6-16.2.4.2 Batching Accuracy. Once a week the accuracy of each batching device shall be checked during a weighing operation by noting and recording the weight, and the actual weight batched.

6-16.2.5 Batch-Plant Control. When the control plant is operating the measurement of all constituent materials included cement, each size of aggregate, water and admixtures shall be continuously controlled. The aggregate weights and amount of added water to compensate for free moisture in the aggregates shall be adjusted as necessary. The amount of air-entraining admixture shall be adjusted to control air content within specified limits. A report shall be prepared indicating type and source of cement used, amount and source of admixtures used, aggregate source, the required aggregate and water weights per cubic yard, amount of water as free moisture in each size of aggregate, and the batched aggregate and water weights per cubic yard for each class of concrete batched during plant operation.

6-16.2.6 Concrete.

6-16.2.6.1 Air Content. At least two tests for air content shall be made on randomly selected batches of each class of concrete during each 8-hour period of concrete production. Additional tests shall be made when excessive variation in workability is reported by the placing foreman or Engineer. Tests shall be made in accordance with ASTM C 231. The average of each set of two tests shall be plotted on a control chart on which the average is set at 5.0 percent and the upper and lower control limits at 6.0 and 4.0 percent respectively. The range shall be plotted on a control chart on which the upper control limit is 2.0 percent. For concrete having a nominal maximum aggregate size of 3/4-inch, the average shall be set at 6.0 percent and the lower and upper control limits at 5.0 and 7.0 percent respectively.

6-16.2.6.2 Slump. At least two slump tests shall be made on randomly selected batches of each mixture of concrete during each day's concrete production in accordance with ASTM C 143. Additional tests shall be made when excessive variation in workability is reported by the placing foreman or Engineer. The average of each set of two tests shall be plotted on a control chart on which the upper and lower control limits are the maximum and minimum values, stipulated in 3D-7.4.

6-16.2.7 Preparation for Placing. Foundation or construction joints, forms and embedded items shall be inspected in sufficient time prior to each concrete placement by the Contractor in order to certify the Engineer it is ready to receive concrete. The results of each inspection shall be reported in writing.

6-16.2.8 Placing. The placing foreman shall supervise all placing operations, shall determine that the correct quality of concrete or grout is placed in each location as directed by the Engineer and shall be responsible for measuring and recording concrete temperatures, ambient temperature, weather conditions, time of placement, yardage placed, and method of placement.

6-16.2.9 Vibrators. The frequency and amplitude of each vibrator shall be determined prior to initial use and at least once a month when concrete is being placed. Additional tests shall be made when a vibrator does not appear to be adequately consolidating the concrete. A vibrating reed tachometer or resonant reed tachometer shall be used for checking frequency. The frequency shall be determined while the vibrator is operating in concrete holding tachometer against the upper end of the vibrator while almost submerged and just before the vibrator is withdrawn from the concrete. The amplitude shall be determined with the head vibrating in air. For flexible shaft electric and air vibrators, two measurements shall be taken, one near the tip and another near the upper end of the vibrator head, and these results averaged. For other types of the internal vibrators, measurements shall be taken in accordance with ACI 309. A visual effect scales (optical wedge), as shown in ACI 309 or obtained from the vibrator when required with the "V" parallel to the axis of the vibrator. The make, model, type and size of the vibrator and frequency and amplitude results shall be reported in writing.

6-16.2.10 Moist Curing. At least once each shift an inspection shall be made of all areas subject to moist curing. The surface moisture condition shall be noted and recorded.

6-16.2.11 Protection. At least once each shift an inspection shall be made of all areas subject to cold weather protection. Deficiencies shall be noted. During removal of protection, measurement of concrete and ambient temperature shall be at least hourly.

6-16.2.12 Mixer Uniformity.

6-16.2.12.1 Concrete Plant Mixer. At the start of concrete placing, and at least once every three months when concrete is being placed, uniformity of concrete shall be determined. The initial and every fourth test shall be performed in accordance with regular test of CRD-C 55. Other tests shall be performed in accordance with abbreviated tests of CRD-C 55. Whenever adjustments in mixer or increase mixing times are necessary because of failure of any mixer to comply, the mixer shall be retested after adjustment. For complete testing three different batches of concrete shall be tested. For abbreviated tests one batch shall be tested. Results of tests shall be reported in writing.

6-16.2.12.2 Truck Mixers. At the start of concrete placing and at least once every three months when concrete is being placed, uniformity of concrete shall be determined in accordance with ASTM C 94. The truck mixers shall be selected randomly for testing. When satisfactory performance is found in one truck mixer, the performance of mixers of substantially the same design and condition of blades may be regarded as satisfactory. Results of tests shall be reported in writing.

6-16.3 Action Required.

6-16.3.1 Fine Aggregate.

6-16.3.1.1 Grading. When the amount passing any sieve is outside the specification limits, the fine aggregate shall immediately be resampled and retested. If there is another failure on any sieve, the fact shall immediately be reported to the Engineer, and immediate steps shall be taken to rectify the situation.

6-16.3.1.2 Moisture Content. Whenever the moisture content of the fine aggregate changes by 0.5 percent or more, the scale settings for the fine aggregate batcher and water batcher shall be adjusted directly or by means of moisture compensation device.

6-16.3.2 Coarse Aggregate.

6-16.3.2.1 Grading. When the amount passing any sieve is outside the specification limits, the coarse aggregate shall immediately be resampled and retested. If the second sample fails on any sieve, that fact shall be reported to the Engineer. When two consecutive averages of 5 tests are outside of specification limits, that fact shall be reported to the Engineer and immediate steps shall be taken to correct the grading.

6-16.3.2.2 Moisture Content. Whenever the moisture content of the smallest size of coarse aggregate changes by 0.5 percent or more, the scale settings for the aggregate batcher and water batcher shall be adjusted directly or by means of a moisture compensation device.

6-16.3.3. Deleterious Substances. When the results for a deleterious substance is outside the specification limits, the aggregate shall be resampled and retested for the deleterious substance that failed. If the second sample fails, that fact shall be reported to

the Engineer. When material finer than No. 200 sieve for coarse aggregate exceeds specification limit, immediate steps, such as washing or other corrective actions, shall be initiated.

6-16.3.4 Scales. Whenever either the weighing accuracy or batching accuracy is found not to comply with specification requirements, the plant shall not be operated until necessary adjustments or repairs have been made. Discrepancies in recording accuracies shall be corrected immediately.

6-16.3.5 Concrete.

6-16.3.5.1 Air Content. Whenever points on the control chart approach the upper or lower control limits an adjustment should be made in the amount of air-entraining admixture batched. If a single test result is outside the specification limit such adjustment is mandatory. As soon as practical after each adjustment another test shall be made to verify the correctness of the adjustment. Whenever a point falls above the upper control limit for range, the dispenser shall be calibrated to insure that it is operating correctly and with the good reproductibility. Whenever two consecutive points either for average or range are outside the control limits the Engineer shall be notified. Whenever the air content departs from the specified range, the concrete shall not be delivered to the forms.

6-16.3.5.2 Slump. Whenever points on the control chart approach the upper or lower control limits an adjustment should be made in the batch weights of water and fine aggregate. When a single slump is outside the control limits such adjustment is mandatory. As soon as practical after each adjustment another test shall be made to verify the correctness of the adjustment. Whenever the slump departs from that stipulated in 3D-7.4 more than 1/2 inch the concrete shall not be delivered to the forms. Whenever two consecutive slump tests, made during a period when there was no adjustment of batch weights, produce a point on the control chart for range above the upper control limit, the slump shall be considered to be out of control and the additional testing for aggregate moisture content required in 3D-16.2.1.2 shall be undertaken.

6-16.3.6 Placing. The placing foreman shall not permit placing to begin until he has verified that an adequate number of acceptable vibrators in working order and with competent operators are available. Placing shall not be continued if any pile is inadequately consolidated. If any batch of concrete fails to meet the temperature requirements, immediate steps shall be taken to improve temperature controls.

6-16.3.7 Moist Curing. When a daily inspection report lists an area of inadequate curing, the required curing period for that area shall be extended by one day.

6-16.3.8 Protection. Whenever any concrete temperature during the period of protection or protection removal fails to comply with the specifications, that fact shall be reported to the Engineer and immediate steps should be taken to correct the situation.

6-16.3.9 Mixer Uniformity. When a mixer fails to meet mixer uniformity requirements, either the mixing time shall be increased or adjustments shall be made to the mixer until compliance is achieved.

6-16.4 Reports. All results of tests conducted at the project site shall be reported weekly and shall be delivered to a designated representative of the Engineer within 3 days after the end of each weekly reporting period. Each weekly report shall include the updating of control charts covering the entire period from the start of the construction season through the current week. During periods of cold weather protection, reports of pertinent temperatures shall be made daily. These requirements do not relieve the Contractor of the obligation to report certain failures immediately as required in preceding paragraphs. Such reports of failures and the action taken shall be confirmed in writing in the routine reports. The Engineer has the right to examine all Contractor quality control reports. Format of the reports shall be as prescribed in SP-22.

6-17 MEASUREMENT AND PAYMENT

No measurement will be made for concrete. Unless otherwise specified, payment for concrete will be made at the respective contract lump sum prices for the various items of the schedule. These prices shall include the cost of all labor, materials, and the use of all equipment and tools required to complete the concrete work.

SECTION 7
TURFING

7-01 SCOPE OF WORK

The work provided for herein consists of furnishing all plant, labor, equipment, and materials, and performing all operations necessary for finished dressing, fertilizing, seeding, and mulching areas as specified herein and as indicated on the drawings. The establishment of turf shall be performed upon completion of embankment construction in minimum lengths of 500 feet. The period of the year in which the establishment of turf is done on a particular length of embankment will determine the method indicated in Table I which shall be followed for that particular length of embankment. Only one of the methods listed in Table I will be required for that particular length of embankment.

7-02 AREAS TO BE TREATED

Turf shall be established on all disturbed areas within the construction limits and on all newly constructed embankments. All sections along the Jefferson and Orleans Levees from backslope toe to crown to normal waterline, which are unturfed upon completion of dredging and levee work, shall be included in the areas to be turfed. In addition, areas of the Jefferson Lakefront landside berm which receive excess fill from levee degrading will require turfing.

7-03 COMMENCEMENT, PROSECUTION AND COMPLETION

7-03.1 General

Preparation of the ground surface, fertilizing, seeding and mulching operations shall be accomplished during the applicable growing season as specified in Table I.

7-03.2 Sequence of Work

The sequence of operations for work prescribed in this section, except mowing, shall be as follows:

1. Preparation of ground surface.
2. Preparation of slurry consisting of fertilizer, seed, and wood cellulose fiber mulch.
3. Application of slurry.
4. Watering.
5. Post-fertilizing

7-04 MATERIALS

7-04.1 Fertilizer, During Mulching Operations

The Contractor will be required to supply representative samples of levee material to the Louisiana Cooperative Extension Service to determine the quantity of fertilizer and lime to be used. This service will take a period of three weeks to obtain results.

Fertilizer shall be uniform in composition and free-flowing. The fertilizer may be delivered to the site in bags or other convenient containers or delivered in bulk. If delivered in bags or containers, the fertilizer shall be fully labeled in accordance with the applicable State fertilizer laws and shall bear the name, tradename or trademark, and warranty of the producer. The fertilizer shall meet the requirements for commercial fertilizer and shall contain a minimum of 100 pounds of available nitrogen per acre, a minimum of 100 pounds of available phosphorus per acre, and a minimum of 100 pounds of available potassium per acre, or the amount determined by the Louisiana Cooperative Extension Service. Should the commercial fertilizer be furnished in bulk, the Contractor shall furnish certified weight tickets and a certified quantitative analysis report, in triplicate, from a recognized testing laboratory certifying the nutrient ratio of the materials. In the event the commercial mixture is delivered to the job site in the original containers, unopened, the analysis report will not be required.

7-04.2 Fertilizer, Postplanting

The fertilizer shall meet all of the requirements of 7-04.1 above except it shall contain a minimum of 50 pounds of available nitrogen per acre, or the amount determined by the Louisiana Cooperative Extension Service.

7-04.3 Soil for Repairs

For fill of areas to be repaired, soil shall be of a quality at least equal to that which exists in areas adjacent to the area to be repaired. Soil used shall be free from roots, stones, and other materials that hinder grading, planting, and maintenance operations and shall be free from objectionable weed seeds and toxic substances.

7-04.4 Seed

Seed labeled in accordance with U.S. Department of Agriculture Rules and Regulations under the Federal Seed Act shall be furnished by the Contractor. Seed shall be furnished in sealed, standard containers unless written exception is granted. Seed that is wet or moldy or that has been otherwise damaged in transit or storage will not be acceptable. The specifications for seeds shall conform to the following and shall be seeded at the following rates:

TABLE I			
SEEDING PERIOD AND GRASSES TO BE USED	MINIMUM PURITY%	MINIMUM GERMINATION %	MINIMUM RATE LBS/ACRE
<u>2 March - 14 September</u>			
Hulled Common Bermuda Grass	95	87	40
<u>15 September - 31 December</u>			
Unhulled Common Bermuda Grass	95	87	60
Cereal Rye	95	86	70
<u>1 January - 1 March</u>			
Unhulled Common Bermuda Grass	95	87	30
Hulled Common Bermuda Grass	95	87	30
Rye Grass	97	82	55

7-04.5 Water

Water shall be free from oil, acid, alkali, salt, and other substances harmful to growth of grass. Lake Pontchartrain water is not acceptable. Water from 17th Street Canal is not acceptable.

7-04.6 Mulch

Wood fiber mulch shall be furnished and applied by the Contractor. Materials that contain noxious grass or weed seeds that might be detrimental to the turfing being established or to adjacent land will not be acceptable.

7-04.7 Wood Cellulose Fiber Mulch

Wood cellulose fiber mulch for use with hydraulic application equipment shall consist of specially prepared wood cellulose fiber mixed with a nontoxic, organic tackifier. It shall be processed to contain no growth or germination inhibiting factors, and dyed an appropriate color to facilitate visual metering of application of materials. The mulch material shall be supplied in packages having a net weight not in excess of 100 pounds. The wood cellulose fiber shall contain not in excess of 10 percent moisture, air dry weight basis. The wood cellulose fiber shall be manufactured so that after addition and agitation in slurry tanks, with fertilizer, grass seed, water, and any other additives, the fibers in the material will become uniformly suspended to form a homogeneous slurry; and that when hydraulically sprayed on the ground, the material will form a blotter-like ground cover which, after application, will allow the absorption of moisture and allow rainfall or mechanical watering to percolate to the underlying soil. The Contractor shall be prepared to submit, on request, certification from the supplier that laboratory and field testing of the product has been accomplished, and that the product meets the foregoing requirements.

7-05 SAMPLING AND TESTING

7-05.1 General

Sampling and testing shall be the responsibility of the Contractor and shall be performed at no additional cost. Sampling and testing shall be performed by a recognized commercial testing laboratory or may be performed by the Contractor. Tests shall be performed in sufficient number to insure that materials meet the specified requirements. Signed copies of the test results shall be furnished to the Engineer.

7-05.2 Material Testing

1. Fertilizer - Duplicate signed copies of invoices from suppliers shall be furnished. Invoices shall show quantities and percentage of nitrogen, phosphorous, and potassium for the preplanting fertilizer and percentage of nitrogen for the postplanting fertilizer. Upon completion of the project, a final check of the total quantity of fertilizer used will be made against total area treated, and if minimum rates of application have not been met, an additional quantity of material sufficient to make up the minimum application rate shall be distributed as directed.

2. Seed - The Engineer shall be furnished duplicate signed copies of statements certifying that each container of seed delivered is labeled in accordance with the Federal Seed Act and is at least equal to the requirements specified in 7-04.4. This certification shall be obtained from the supplier and shall be furnished on or with all copies of seed invoices.

3. Mulch - Representative samples of the materials proposed for use shall be submitted for approval.

7-06 SPECIAL EQUIPMENT

Wood Cellulose Fiber Mulch Spreader

Hydraulic equipment used for the application of slurry that contains fertilizer, grass seed, and wood cellulose fiber shall have a built-in agitation system with an operating capacity sufficient to agitate, suspend, and homogeneously mix a slurry containing up to 300 pounds of fiber plus an amount of fertilizer and grass seeds to supply the rates specified in 7-04.1 and 7-04.4, respectively, for each 1,000 gallons of water. The slurry distribution lines shall be large enough to prevent stoppage. The discharge line shall be equipped with hydraulic spray nozzels that will provide even distribution of the slurry on the various slopes to be mulched. The slurry tank shall have a minimum capacity of 1,000 gallons and shall be mounted on a traveling unit, which may be either self-propelled or drawn by a separate unit, that will place the slurry tank and spray nozzles near the areas to be mulched so as to provide uniform distribution without waste. The Engineer may authorize equipment with a smaller tank capacity provided that the equipment has the necessary agitation system and sufficient pump capacity to spray the slurry in a uniform coat over the surface of the area to be mulched.

7-07 PREPARATION OF GROUND SURFACE

7-07.1 General

Equipment, in good condition, shall be provided for the proper preparation of the ground and for handling and placing all materials. Equipment shall be approved by the Engineer before work is started.

7-07.2 Clearing

Prior to grading and tilling, vegetation and debris that may interfere with turfing operations shall be mowed, grubbed, and raked; and shall be disposed of off the site as specified in Section 3-04.

7-07.3 Grading

Previously established grades and/or slopes shall be maintained in a true and even condition on the areas to be turfed. Necessary repairs to previously graded areas shall be with suitable material placed as prescribed in Section 3 and on drawings.

7-07.4 Tillage

After the areas required to be turfed have been brought to the specified grades, the soil shall be tilled to a depth of at least 2 inches by plowing, disking, harrowing, or other approved operations until the condition of the soil is acceptable. The work shall be performed only during periods when, in the opinion of the Engineer, bene-

7-11 WATERING

The Contractor will be required to water the area planted sufficiently to promote growth. Relying solely on rainfall will not be an acceptable method of watering.

7-12 MOWING

The seeded areas shall be mowed with approved mowing equipment to a height of 3 to 4 inches whenever the height of vegetation becomes 6 to 8 inches. When the amount of grass is heavy, it shall be removed to prevent destruction of the underlying turf. The Contractor shall be responsible for mowing until the physical completion of all items of the contract.

7-13 MAINTENANCE

Maintenance shall consist of watering and mowing as specified in 7-11 and 7-12 and any other work incidental to proper maintenance. Maintenance will be required until the contract is completed.

7-14 REPAIR

When the surface to be turfed becomes gullied or otherwise damaged or when previously placed turfing is damaged, the affected area shall be repaired to re-establish the condition prior to injury, as directed. Repair work required because of faulty operations or negligence on the part of the Contractor shall be performed without additional cost.

7-15 INSPECTION AND ACCEPTANCE

Final acceptance will be made on completion of the contract. Acceptance of the established turf will be determined by visual inspection. Existence of erosion problems or dead or dying turf will not be acceptable. Payment will not be made until turf is in an acceptable condition.

7-16 MEASUREMENT

Establishment of turf by fertilizing, seeding, mulching, and post fertilizing will be measured for payment by the acre. Acreage will be determined from the surface areas computed from the theoretical gross cross section of embankment fertilized, seeded, mulched, and post fertilized. Measurement will be to the nearest foot and units computed to the nearest one-hundredth of an acre.

7-17 PAYMENT

Payment for establishment of turf by fertilizing, seeding, mulching, and post fertilizing will be made at the contract unit price per acre for Bid Item No. 13 and payment shall constitute full compensation for furnishing all plant, labor, materials, and equipment, and performing all operations necessary in accordance with these specifications.

SECTION 8
STRUCTURAL - PEDESTRIAN BRIDGE

8-01 STRUCTURAL STEEL

Refer to Louisiana Standard Specifications for Roads and Bridges (1982 Edition) Sections 807, 810, 815, 1013.01 and 1013.23 by the Department of Transportation and Development. All structural metal work must conform to ASTM A36.

8-02 STRUCTURAL CONCRETE AND REINFORCEMENT

Must be in accordance with Louisiana Standard Specifications for Roads and Bridges (1982 Edition) Sections 805 and 806. All concrete shall have a minimum compressive strength of 3,500 psi. All reinforcing bars shall be deformed steel bars, ASTM 615, ASTM 616, ASTM 617. No. 7 bars and larger shall be grade 60, #6 bars and smaller may be Grade 40 or 60. The Bend Test requirements for rail steel deformed bar shall be as specified in ASTM 616.

All concrete shall be painted with Thorocoat as manufactured by Thoro System Products or approved equal. The color shall be equivalent to: 27-1P Indigo White by Thoro System Products.

8-03 PILES

Must be in accordance with Louisiana Standard Specifications for Roads and Bridges (1982 Edition) Section 804, 901, and 1009. Maximum design load will be 45 tons for 24" square piles, and 20 tons for 14" square piles. The top 20' of the 24" square piles, and the top 15' of the 14" square piles shall be painted with Thorocoat as manufactured by the Thoro System Products or approved equal. The color shall be equivalent to: 27-1P Indigo White by Thoro System Products.

8-04 PAINTING AND PROTECTIVE COATINGS

8-04.1 Scope

This work consists of furnishing all labor, material, plant and equipment, and performing all operations in connection with the painting (prime coat, intermediate coat, top coat) of all metalwork in accordance with these Specifications.

Metalwork embedded in or in contact with concrete shall be prime painted only.

8-04.2 Materials

All paints for structural steel shall be from a single manufacturer. The paint manufacturer's technical data sheet instructions shall be followed. The indicated paints are to be manufactured to the Mobay Chemical Corporation formulations using applicable Mobay resins Desmodur E-21, Desmodur N and Desmophen 650A-65. Any prime coat paint, intermediate coat paint, or top coat paint required for touch up shall be provided by the Contractor.

a. Primer Coat -.3 mils. Desmondur E-21 zinc rich primer (Mobay Reference NB#274306).

b. Intermediate Coat - 3-4 mils high build polyamide epoxy compatible with primer and top coat and tinted pale blue.

c. Top Coat - 2 mils polyester/aliphatic urethane based on Desmophen 650A-65 and Desmodur N; color and designation as follows:

Handrail and Barrier Posts: Equivalent to Marine Blue,
(U-1-5050 by Keeler and Long)

Steel Girders and Framing: Equivalent to Blue Mist, (U-1-5488
by Keeler and Long)

8-04.3 Cleaning and Surface Preparation

All metal surfaces shall be blast cleaned to Near White in accordance with Steel Structures Painting Council Standard SSPC-SP-10.

Intermediate and top coats shall be applied over clean and tightly adhering coated surfaces.

8-04.4 Paint Application

a. All metalwork shall be painted with the indicated primer coat on properly cleaned surfaces.

b. Paint application shall be in accordance with the provisions of the Steel Structures Painting Council Paint Application Specification SSPC-PA1 and the paint manufacturer's technical data sheets.

c. Paint shall not be applied during inclement weather, upon wet or frosted surfaces, or when the atmosphere is foggy or misty, or when the surface is within 5°F of the dew point, or under any conditions not acceptable by the paint manufacturer.

d. All paint shall be properly mixed with mechanical mixers to the proportions recommended by the paint manufacturer.

e. Paint shall be applied by air or airless spray, or by brush on small areas only, to the required mil thickness. Any areas where the required minimum dry film thickness is not obtained shall be repainted with the same paint within the limits ordered by the Engineer. If conventional air spray is used to apply urethane paints, water traps and chemical air driers sufficient to remove all free water must be used on the air lines.

f. All marred, soiled, or deteriorated paint surfaces shall be properly recleaned and repainted before applying subsequent coatings.

g. The finished painted metalwork shall be of uniform color, all metalwork coated, cracks and cavities sealed, and free of markings, drips, or spills.

h. All metalwork shall receive the specified 3 coat paint system except the faying surfaces at all connections. All interior connecting surfaces and bolt holes shall receive a single coat of primer. Masking of these surfaces will be required to prevent application of the intermediate coat to these areas. All exterior surfaces of connections shall be completely painted.

i. Field Sandblast clean all bolted connections and apply the 3 coat system.

j. Steel may come to the site with primer and intermediate coat but full top coat must be field applied over properly cleaned surfaces. The Contractor may not supply the steel to the field with prime coat only. All metalwork that is to be painted shall be painted prior to installation of the 12" diameter waterline.

8-04.5 Paint Touch-Up

a. Large rusted areas (over 36 square inches) - Sandblast clean the rusted area and apply the three coat system.

b. Small rusted areas (less than 36 square inches) - Power tool clean with non-woven abrasives and apply the three coat system.

c. Marred areas - non-rusted areas, apply the three coat system over a properly prepared surface.

8-05 BRIDGE BEARINGS

Bridge bearings shall conform to Fabreeka Structural Bearings or approved equal.

8-06 STRUCTURAL EXCAVATION & BORROW

Must be in accordance with Louisiana Standard Specifications for Roads and Bridges (1982 Edition) Section 203 and 802.

8-07 REVETMENT CONCRETE

Must be in accordance with Louisiana Standard Specifications for Roads and Bridges (1982 Edition) Section 712.

8-08 12" WATER MAIN

For specifications pertaining to the 12-inch water main, see Section 9-05.3 of these specifications.

8-09 MEASUREMENT AND PAYMENT

Payment for the Pedestrian Bridge will be made under Bid Item No. 14 at the contract lump sum price which shall include all materials, labor, tools and equipment and the performance of all work to complete the Pedestrian Bridge as indicated on the Contract Drawings and as specified herein. Bid Item No. 14 shall include the hardware for attaching the water main to the bridge but not the water main itself, nor installation, which will be paid under Bid Item No. 21, per lump sum.

Demolition and removal of the existing pedestrian bridge will be paid under Bid Item No. 3B, per lump sum.

SECTION 9
MISCELLANEOUS SPECIFICATIONS

9-01 RIPRAP

9-01.1 General

This work consists of furnishing and placing riprap in accordance with these specifications and in conformity to lines, grades and thickness shown on the plans or as directed.

9-01.2 Materials

Riprap shall consist of stone that will not disintegrate upon exposure to the elements or be easily broken from handling, and shall be reasonably free from earth and other foreign materials. When tested in accordance with AASHTO Designation: T 85, the solid weight of stone shall be at least 150 pounds per cubic foot (based on bulk specific gravity) and the absorption shall not exceed 2 percent. Samples of stone from a source not previously approved shall be taken under supervision of the Engineer and submitted for testing and approval prior to delivery to the project. The least dimension of an individual stone shall be at least 1/3 its maximum dimension, and each shipment of stone shall be reasonably well graded within the specified limits.

Broken concrete conforming to these material and gradation requirements may be used as riprap, provided its solid weight is at least 130 pounds per cubic foot (based on bulk specific gravity) and the absorption shall not exceed 2 percent. Samples of stone from a source not previously approved shall be taken under supervision of the Engineer and submitted for testing and approval prior to delivery to the project. The least dimension of an individual stone shall be at least 1/3 its maximum dimension, and each shipment of stone shall be reasonably well graded within the specified limits.

Control of gradation will be by visual inspection either at the source or project site or both, at the Engineer's option.

Any difference of opinion between the Engineer and Contractor shall be resolved by checking the gradation of 2 random truckloads (or equivalent size samples). Equipment, labor and sorting site shall be furnished by the Contractor at his expense.

Individual stones shall not be more than 18 inches in any dimension and at least 50 percent of the weight of material shall consist of stones weighing at least 35 pounds. Riprap shall contain not more than 5 percent of material by dry weight passing a 1/2 inch sieve.

Random riprap shall be dumped or roller into place in such manner that smaller stones will be uniformly distributed throughout the mass. Sufficient hand work shall be done to procure a neat and uniform surface.

9-01.3 Sacked Concrete

As an alternate to random riprap, sacked concrete may be used. Sacks shall be suitable new burlap bags, approved reinforced Kraft shipping sacks or approval material. Concrete shall be Class R Concrete conforming to Section 902 of LaDOTD Standard Specifications for Roads and Bridges. Concrete shall be wet-batched prior to placement in sacks, and sacked concrete shall be immediately placed in the revetment after batching. Mixing water for concrete shall be added as required to produce a slump of 4 to 6 inches.

9-01.4 Method of Measurement

Quantities for payment will be the design areas as indicated on the contract drawings and adjustments thereto. Design quantities are based on surface areas shown on the plans to be riprapped. Measurement will be made to the nearest foot with units calculated to the nearest square yard. Design quantities will be adjusted if the engineer makes changes to adjust to field conditions, if plan errors are proven, or if design changes are made.

9-01.5 Basis of Payment

Riprap will be paid for under Bid Item No. 15 at the contract unit price per square yard. No payment will be made for any riprap placed beyond the limits shown on the contract drawings or adjustments thereto.

9-02 RECONSTRUCTION OF ORPHEUM AVENUE AND CONSTRUCTION OF PARKING AREA

9-02.1 Reference Standard

All road construction shall be in accordance with the Louisiana Standard Specification For Roads and Bridges, 1982, Part V.

9-02.2 Measurement and Payment

Payment for Reconstruction of Orpheum Avenue and Construction of the Paved Parking Area will be made under Bid Item No. 16 at the contract lump sum price. This price shall include all materials, labor, tools and equipment and the performance of all work to complete the roadway and parking area as indicated on the contract drawings as specified herein.

9-03 BOAT SLIPS

9-03.1 General

This work consists of furnishing all plant, equipment, labor and materials, and performing all operations in connection with the construction of boat slips, in accordance with the contract drawings and as specified herein. The Board reserves the right to change the number and/or spacing of the boat slips prior to their construction, and/or to add or delete piles.

9-03.2 Materials

9-03.2.1 Treated Timber

Timber shall be in accordance with Section 5 of these specifications.

9-03.2.2 Timber Piles

Piles shall be in accordance with Section 5 of these specifications. All 40-ft. piles shall have a 20-gage galvanized sheet metal cover, facing timbers and screw ringbolt in accordance with the contract drawings.

9-03.2.3 Timber Hardware

Hardware for timber shall be in accordance with paragraph 5-05 of these specifications.

9-03.2.4 Boat Cleats

Cleats shall be 10 inch cast iron Perko No. 544 with open base, or approved equal.

9-03.3 Measurement

Measurement of the 40-ft. piles shall be per each.

Measurement of the 20-ft. piles shall be per each.

Measurement of treated timber, including the required wales, shall be to the nearest tenth of a MFBF.

9-03.4 Payment

Payment for the 40-ft. piles shall be under Bid Item No. 17A at the contract unit price per each and shall include the pile in place with the required metal cover, facing timbers and ringbolt.

Payment for the 20-ft. piles shall be under Bid Item No. 17B at the contract unit price per each and shall include the pile in place.

Payment for treated timber, including the required wales, shall be under Bid Item No. 17C at the contract unit price per thousand board feet and shall include the timber in place. There will be no direct payment for hardware or boat cleats and as such the Contractor should include these in this bid item.

9-04 MUCK RETAINERS

9-04.1 General

A temporary muck retainer shall be placed across the canal floor at the southern limit of dredging prior to commencement of dredging. The purpose of the muck retainer is to prevent silt and muck from traveling into the newly dredged area from that region south of the dredging limit. The area underneath and south of the Hammond Highway Bridge will not be dredged under this contract. Provisions shall be made for easy placement and removal of the muck retainer and shall be approved by the Engineer. Removal of the retainer is not a part of this contract.

A suggested system of connecting the muck retainer blocks is shown on the drawings. Such a system will aid in setting the blocks and aid in locating the blocks during removal.

9-04.2 Materials

The retainer shall consist of a series of concrete blocks, 2' x 2' x 10', connected with a galvanized steel cable as shown on the drawings. The concrete shall be a dense homogeneous Portland cement concrete mixture capable of developing a 28-day compressive strength of 3,000 psi and shall have reinforcement conforming to ASTM 615, grade 40 as shown on the drawings. The connection cable shall be 1/2" diameter steel (galvanized).

9-04.3 Measurement and Payment

Payment for the muck retainer, Bid Item No. 18, shall be lump sum and shall include all materials required for the blocks and an approved system of placement and removal. Payment will be made upon acceptance of the placement of the muck retainer system.

9-05 UTILITIES

9-05.1 General

The Contractor shall exercise caution when working the vicinity of existing utilities. The Contractor must protect all existing utilities and improvements, public or private, located in the work area, during the entire period of work. Special care must be taken in backfilling and compacting under and around such improvements. Repair of damage to any items will be the responsibility of the Contractor.

The locations of buried and aerial utilities are shown on the contract drawings to the best of the Engineer's knowledge. It is, however, up to the Contractor to determine in a safe and reliable manner, the exact location and elevation of any utilities in the vicinity of digging. He shall also investigate the possibility of the existence of any other utilities.

The Contractor shall be required to notify the utility companies when construction commences in each area.

9-05.2 Sewer Main

9-05.2.1 Scope

It shall be the Contractor's responsibility to: 1) relocate the existing 8-inch sewer main along Orpheum Avenue, as shown on in the contract drawings, 2) locate the existng house connections and transition them into the new main, and 3) remove and properly dispose of all terminated lines, manholes and valves.

This work consists of furnishing all labor, material, tools and equipment to construct complete in place the sewer main, connections, manholes, tests and all appurtenant work as shown on the drawings and as specified herein and in accordance with the Jefferson Parish Standard Detail Sheet (Sheet No. 205 of the contract drawings).

9-05.2.2 Applicable Specifications

a) The 8-inch sewer line and the 6 inch house connections shall be PVC pipe conforming in all respects to ASTM Specification D-3034, SDR-35 thickwall extra heavy series, or approved equal. Pipe section and fittings shall be integral cast bell and elastomeric gasket as recommended by manufacturer, and ASTM D-3212.

b) Installation of sewer pipe shall conform with ASTM Specification D-2321.

c) Bedding for sewer pipe and the existing soil type shall be as indicated on the Jefferson Parish Standard Detail Sheet.

d) Required manholes shall be constructed in accordance with the Jefferson Parish Standard Detail Sheet.

e) The Contractor shall use timber sheeting to control the width of excavation and to provide safe working conditions for his workmen.

f) Infiltration shall not exceed 125 gallons per inch of pipe diameter per mile of pipe in 24 hours.

g) It is required that the testing laboratory selected by the Parish/Engineer, perform with the assistance and at the expense of the Contractor, the sewer infiltration test and the force main pressure and leakage tests. The laboratory shall transmit to the Parish/Engineer a written report of the tests.

h) Contractor shall verify elevations of existing sewers.

i) The Contractor shall furnish the Parish/Engineer with an "AS BUILT" plan showing the distance from the nearest manhole to each house connection, the depth of each manhole and the center to center distance between them. The Contractor shall verify the depth and location of all house connections upon completion of the Project and before approval.

9.05.3 Water Main

9.05.3.1 Scope

It shall be the Contractor's responsibility to: 1) relocate the existing 12-inch water main along Orpheum Avenue and across the canal, as shown on the contract drawings, 2) locate the existing house connections and transition them into the new main, and 3) remove and properly dispose of all terminated lines, hydrants and valves.

It is brought to the Contractor's attention that while the new location for the underground main is shown on the utility drawings, details for passing the main under the tie-back anchor and for attaching it to the new pedestrian bridge are shown on Sheet Nos. 9 and 115 respectively of the contract drawings.

This work consists of furnishing of all labor, material, tools and equipment to construct complete in place the water main, tap-in, tests and sterilization and all appurtenant work as shown on the drawings and as specified herein and in accordance with the specifications of the American Water Works Association (A.W.W.A.) and shall comply with all pertinent requirements of the Louisiana State Board of Health.

The Contractor shall do the excavating of all kinds of materials encountered, furnish or compact foundations where required, furnish and install all timbering, sheeting and bracing necessary or proper to safely support all work, remove all water, protect, repair, relocate, maintain and restore all subsurfaces, surface and overhead structures directly or indirectly disturbed, injured or affected by his operations, provide all backfill and furnish all other appurtenant items and services necessary or specified.

9-05.3.2 Materials

a. The materials used in this work shall be all new and shall conform to the requirements for class, kind and size for materials as specified below. The Contractor shall submit in writing a list of materials to be furnished showing the manufacturer and designation of all items. In addition a pipe layout is to be submitted to the Engineer, after verification of pertinent field dimensions, showing details of various joints, tie-ins, etc. All of these submittals are to be approved by the Engineer prior to fabrication and installation.

b. Ductile Iron Water Pipe, 12" diameter: Ductile iron pipe shall conform to ANSI Specification A21.51, and thickness design shall conform to ANSI Specification A21.50, both with latest revisions. Pipe supplied shall be Class 54 and shall meet all requirements for push-on rubber gasketing joints in accordance with ANSI Specification A21.11 with latest revisions. Manufacturer's certificates shall be furnished to the Engineer. In cases where the type of joint to be used requires heavier pipe no additional payment will be allowed. Laying lengths of 18'-0" are to be used on the bridge crossing as indicated on Plans.

c. Restrained Joints: All joints (unless noted otherwise on the Plans) are to be restrained joints similar to American "Flex Ring" U.S. "Tyton-Joint" with "Lok-Tyton" gaskets or "TR-Flex" or Clow "Super-Lock". Retainer glands usage will not be permitted. Any bolts and nuts used are to be of stainless steel.

d. Cement Lining: All pipe and fittings shall have cement lining in accordance with ANSI Specification A21.4 with latest revision. The asphaltic seal coat sprayed on the cement lining surface to assist in proper curing is to be used.

e. Plastic Casting: All ductible iron pipe and fittings, gate valves, tapping sleeves and valves, fitting anchorages, bridge tie-down plates with rods, nuts and washers and hardware accessories shall be prepared and coated as follows.

1. General: All initial application of coating herein specified shall be done by experienced plastic coating applicators.

2. Surface Preparation: All surfaces to be coated shall be dry sandblasted to a No. 2 Finish.

A No. 2 sandblasting finish as used herein is defined to mean a surface with gray-white metallic color, slightly roughened to form a suitable anchor pattern for coatings. The surface when viewed without magnification, should be found free of visible rust, corrosion, products, paint or other foreign matter.

No coatings will be permitted to be applied over scale, rust, oil, grit or other foreign matter. All sand will be removed from surface by brush or air blast prior to applying first coat.

Compressed air used for nozzle blasting shall be free of detrimental amounts of water or oil. Adequate separators or traps shall be provided and these shall be kept emptied of water and oil.

The grit size shall be thirty (30) to fifty (50) mesh abrasive. The nozzle size shall be selected so that sand discharges at 100 PSIG. It is suggested that the nozzle distance from the metal surface be six (6) to twelve (12) inches.

The height of the anchor profile shall be between 1.5 and 2 mils. This height can be determined by grinding a flat spot on the blasted surface until the bottom of the pits are almost reached. The height may then be measured with a micrometer dip gauge graduated to read 0.001 inch and with a base having a bearing length of two (2) inches and a measuring rod of 3/32 inch in diameter. (See SSPC-SP-5-52T). If the maximum particle size specified in above produces an anchor pattern that is too rough or too high, the abrasive size shall be reduced.

Sandblasting out of doors shall be permitted only during daylight hours, and on surfaces that will not be wet after blasting or before painting, or when surfaces are less than five (5°) degrees fahrenheit above dew point or the relative humidity is greater than eighty-five (85%) percent. The only exception to this will be for rough initial sandblasting which will be allowed during night, provided the surface shall be swept clean and bright the next morning with fresh light sandblasting to provide a No. 2 sandblasting surface.

The sandblasted surface will be coated with a coat of metal conditioning primer, as outlined herein, during the same day as blasted, prior to sundown of that day, and also, before any visible or detrimental rusting occurs.

3. Application General: All application will be done according to paint manufacturer's recommendations included with materials and will be subject to inspection by the Department of Water's representative at all times.

No coating will be applied out-of-doors during fog, mist or rain, when relative humidity is about 85% or the temperature is below 50° Fahrenheit, or on wet surfaces.

All coating will be allowed to dry for the specified time, prior to application of succeeding coats.

All coating materials furnished by applicator will be furnished in unopened, clearly identified containers. No mixing of different coatings will be done without express permission of the Director of Water.

Coatings will be vigorously stirred and mixed for such time as pigments, vehicles and catalysts are thoroughly mixed. Coatings should be continuously stirred if so specified by the manufacturer.

Coatings will be thinned only as specified herein.

All coating film thicknesses must be strictly adhered to, as well as to assure all films are free from defects such as pinholes, voids, bubbles, etc. These film thicknesses are to be measured with elcometer film thickness set by micrometer caliper. Defects will be checked with a holiday detective acceptable to the Director of Water.

Where film thicknesses do not meet Specifications and/or defects are found, additional coating material shall be applied and such defects will be repaired with no additional compensation made to the contractor.

Potlife shall not exceed the limits so specified herein for each coat. When this limit is reached, the spray pot must be emptied, material destroyed and new material mixed.

Prior to the application of any coat of material, all damage to previous coat shall be touched up with corresponding specified coating. Areas damaged after final coat will be wire-brushed and given full coating system. The operational sequence followed in applying coatings will be such that a minimum of damage will be done to finished coatings.

4. Spray Application: All coating shall be spray applied, except the small areas to be touched up and/or inaccessible areas which will be brushed.

All spray equipment must be inspected and approved by the Director of Water before any application is begun.

A moisture trap shall be placed between air supply and pressure pot. This trap will be inspected frequently to assure spraying air is free of moisture.

Regulators and gauges in good working order will be provided for both air supply and pressure pot. Pressures will be regulated according to instructions from the Director of Water's representative.

The spray gun will be held no closer than six (6) inches or farther than ten (10) inches from surfaces being sprayed, and at right angles to the surface being sprayed. Coatings will be brush applied where this cannot be done for any reason. Excess arcing of the gun will not be tolerated.

Fluid pressure shall be regulated to deliver specified amount per minute of particular material from spray gun.

Atomizing air shall be regulated to minimum amount required to properly atomize material.

In application of material, each spray pass will overlap the previous spray pattern by fifty (50%) percent. Multipass or cross-hatch application will be used as specified for particular coatings, or when necessary to attain proper film thickness.

5. Brush Application: Coatings will be brushed on all areas which cannot be properly spray coated for any reason.

Brushes shall be of style and quality that will enable proper application of materials. It is suggested that brush width will be no greater than five (5") inches.

Paint will be worked into all crevices and corners, and all runs or sags shall be brushed out in order to assure no air pockets, solvent bubbles or voids.

6. Primer: Primer shall be Glidden's Vinyl-Cote Metal Conditioning Primer, 178-Y-5 or equal, to be prepared as follows:

Thoroughly agitate vinyl-cote metal conditioning Primer base, 178-Y-1 to get all settled pigment in suspension, then mix as follows for spray:
Base 178-G-1-----4 parts
Acid component 178-C-1-----1 part
Primer reducer 178-C-6-----1 part or as needed

All parts are by volume.

7. Finish Coat: Finish coat shall be Glidden's Metallic Mastic 178-E-9, or equal, to be prepared as follows:

Thoroughly agitate vinyl-cote metallic mastic to get all settled pigment in suspension. Reduce if necessary to retain and wet spray film with Glidden's vinyl-cote hot weather reducer 178-C-3. Apply a thoroughly wet coat to a dry film thickness of nine (9) mils. If necessary, use reduction to avoid a dry spray. Apply only to a dry surface in a dry atmosphere. Use Devilbiss Model MBC spray gun with a No. 78 or 765 cap with B tip or its equivalent. Color shall be equivalent to: Aluminum Blue (CLA 180 by International Paint).

8. Field Touch-Up: After fittings, anchorage, hardware, etc. are in place, all damaged coating must be repaired with full coating system. Before reapplication of primer and succeeding coats, all damaged areas must be thoroughly wire-brushed and wiped with a rag dampened with Glidden's 178-C-3 or equal solvent to remove all foreign matter and rust bloom. Following this preparation of the damaged areas, the materials herein specified (and prepared and mixed as above) may be brush applied.

f. Gate Valves, Tapping Valves and Boxes: Valves shall be iron-body, bronze-mounted double disc gate valves with non-rising stems, with "o" ring seals, shall open when turned counter-clock-wise, for use in horizontal pipelines, and shall conform to A.W.W.A. Specifications C500-52T. Valves shall be equipped with wrench nuts, and shall open by turning to the left. Valve ends shall conform in design to the joint specified herein for pipe and fittings, or as shown on the plans.

All gate valves shall have silicon bronze gland bolts and nuts, silicon bronze stuffing box bolts and nuts, bronze operating stem and nut, silicon bronze bolts and nuts and silicon bronze test plugs.

Valve boxes for valves on twelve (12") inch pipe shall be substantially constructed of high grade cast iron of the heavy duty type for roadway service, with a maximum inside diameter of 5-1/4". Boxes shall consist of oval base, center sections, top section and cover. Center and top sections shall be of the adjustable screw type suitable for the depth of earth cover specified. Cover shall be of deep socket type with the word "water" cast in top. Box shall be Alabama Pipe Company, No. E-3002 with oval base or equal.

Valves twelve (12") inches shall be provided with a 2' square x 4" thick concrete slab at ground level. See Plans for details.

All gate valves will be of such manufacture as will assure interchangeability of parts with existing valves now installed in the system.

For the information of bidders, existing gate valves in the East Jefferson Waterworks District No. One are Mueller or Clow and West Jefferson Waterworks District No. Two are Mueller.

All valves, unless otherwise indicated, shall have hub ends, suitable for use with asbestos-cement pipe class 150, with lead joints.

Tapping valves shall conform with the foregoing Specifications for gate valves except that one end shall be flanged for bolting to the tapping sleeve or cross; the other end shall embody the same type joint as specified for pipe and fittings. One 3-piece valve box, as above specified, shall be furnished with each tapping valve.

g. Corporation Cock: The Corporation Cock Utilized as an Air Valve shall conform to AWWA Standards with a threaded inlet and a brass plugged outlet of Mueller Type H-10045, or approved equal all as shown on a typical detail on the drawings.

h. Tie Rods: Rods with nuts used for securing to pipe laid by others are to be stainless steel as shown on Plans.

i. Responsibility for Materials: The Contractor shall be responsible for all materials furnished by him and shall replace at his own expense all such material found defective in manufacture or damaged in handling after delivery by the manufacturer. This shall include the furnishing of all material and labor required for replacement of installed material discovered defective prior to the final acceptance of the work.

9-05.3.3 Excavation and Preparation of Trench

The trench shall be dug to the alignment and depth required and only so far in advance of pipe line as the engineer shall permit. The sides of the trench shall be sloped and/or braced and the trench drained so that workmen can work safely and efficiently. It is essential that the discharge pumps be laid to natural drainage channels or to drain sewers.

All trenches shall be excavated so that the pipe may be laid accurately to grade with granular fill over the water mains, unless otherwise noted on the drawings.

The trench width, at the top of the trench, may vary depending on the depth of the excavation and the nature of excavated material encountered.

All water main shall be laid on a granular material bed. When the proper bed material is not available from the trench, bedding material shall be furnished by the Contractor. Bedding material for the pipe shall be at least 6" thick.

The trench width at pipe grade shall be ample to permit the proper laying and jointing of the pipe and fittings and for proper backfilling and compaction. The maximum clear width of trench at the top of the pipe shall be not greater than the outside diameter of the pipe plus 2 feet.

The trench shall have a bottom conforming to the grade to which the pipe is to be laid. The pipe shall be laid upon sound soil. Cut true and even so that the barrel of the pipe will have a bearing for its full length. If the excavation is inadvertently made below the bottom conforming to grade, it shall be backfilled with well tamped pit run sand or fine gravel as approved by the Engineer at no additional expense to the Owner.

Bell holes shall be dug at the ends of each length of pipe to permit proper jointing. Excavations for manholes and other structures shall have one foot minimum clearance on all sides.

The Contractor shall provide without additional compensation suitable temporary channels for any water that may flow along or across the site of the work. The excavated material shall be placed on one side of the trench except when permitted by the Engineer to use both sides. All material shall be so placed as not to obstruct any drain or gutter, or to unnecessarily obstruct any passageway.

All surplus material shall be removed by the Contractor and disposed of as directed by the Engineer, within haul distance not to exceed two miles one way at no additional compensation.

9-05.3.4 Sheeting and Bracing

The Contractor, to prevent the disturbing or settlement of adjacent road surfaces, foundations, structures, or other improvements, shall furnish and place all sheeting and bracing necessary to good working conditions acceptable to the Engineers and to prevent damage and delay to the work. The contractor shall be responsible for the strength and sufficiency of all sheeting and bracing. Should the Engineer decide that the sheeting and bracing at any point is inadequate or improperly constructed, he may order additional sheeting or bracing to be placed at the Contractor's expense.

Bracing shall be so arranged as to provide ample working space and so as not to interfere with the work and so as not to place any strain on the structures being constructed until such structures are, in the opinion of the Engineer, of ample strength to withstand such strain. All sheeting and bracing, unless otherwise specified or ordered to be left in place by the Engineer, shall be installed and removed from the work at no additional compensation. No sheeting and bracing shall be removed, until the construction has proceeded far enough to provide ample strength in the opinion of the Engineer.

Any damage to the work under this contract or to adjacent structures or property caused by settlement, water or earth pressures, slides, caves or other causes due to failure or lack of sheeting and bracing or improper bracing or through negligence or fault of the Contractor in any manner shall be repaired by the Contractor without delay at his expense.

Where the trench is not located near existing utilities, building or other structures and where water and other conditions permit, the Contractor may with the approval of the Engineer, omit sheeting and bracing of the excavation. In this event, he shall excavate a space of sufficient size to provide adequate space for the construction work so as to prevent sliding or caving of the banks into the area within the lines of structures.

The Contractor shall leave in place to be imbedded in the backfill of the trench all sheeting and bracing, etc., which the Engineer may direct in writing to be left in place for which the Contractor shall be paid.

In addition to that sheeting and bracing mentioned above, the Contractor may also leave in place, to be imbedded in the backfill of the trench, any sheeting and bracing which he may consider necessary to prevent injury to persons, structures, corporations or property, whether private or public, for which he assumes the entire and sole liability for any damage which may be caused by the installation, and for which he shall receive no payment or extra compensation.

No sheeting and bracing which is within 3 feet of the surface of the ground may be left in place in the trench without written permission from the Engineer. When sheeting and bracing have been ordered left in place, payment for same shall include the upper 3 feet of "cut-off" section of the sheeting.

9-05.3.5 Pipe Foundations

If the Contractor encounters unstable soil not suitable for bedding of pipe, he shall notify the Engineer. He shall remove and replace all unstable material with stabilization material as may be ordered by the Engineer. The Contractor will not be paid extra for such additional excavation and base stabilization material. Material for base stabilization shall be clam shell.

9-05.3.6 Pumping and Bailing

The Contractor shall, at his own expense, pump or otherwise remove any water which may exist in the trenches and shall form all dams or other works necessary for keeping the excavation clear of

water during the progress of work. In case of running sand or other bad ground, the work shall proceed day and night if the Engineer so directs. The Contractor will not be paid for clam shell which is used for maintaining dry trench.

9-05.3.7 Installation of Water Main and Appurtenances

Proper implements, tools and facilities satisfactory to the Engineer shall be provided and used by the Contractor for the safe and convenient prosecution of the work.

Pipe and other materials shall be unloaded and distributed on the job in a manner approved by the Engineer. In no case shall materials be thrown or dumped from the truck. All materials unloaded in an unsatisfactory manner shall be rejected and work shall be stopped until such materials have been examined by the Inspector and approved. The Contractor shall furnish the necessary assistance in such examination of materials.

Water main materials shall be carefully lowered into trench piece by piece by means of a derrick, ropes or other suitable tools or equipment, in such a manner as to prevent damage to materials and protective coatings and lining. Under no circumstances shall water main materials be dumped into the trench. Water main materials shall be placed on the bridge by means of a derrick on a barge in the manner above.

a. Laying of Pipe and Fittings: Before lowering and while suspended, the pipe and fittings shall be inspected for defects to detect any cracks. Any defective, damaged or unsound material shall be rejected.

All foreign matter or dirt shall be removed from the inside of the pipe and fittings before it is lower into its position in the trench or on the bridge, and shall be kept clean by approved means during and after laying. All openings along the line of the main shall be securely closed as directed, and in the suspension of work at any time, suitable stoppers shall be placed to prevent earth or other substances from entering the main.

Every pipe shall be bedded uniformly throughout its entire length, except those sections placed on the bridge.

No pipe shall be laid in water or when the trench conditions are unsuitable for such work, except by written permission of the Engineers.

b. Jointing of Pipe and Fittings:

1. Cast Iron and Ductible Iron

Jointing of mechanical joint pipe, push-on joint pipe, and fittings shall be done accordance with A.W.W.A. Section 9b and 9c of A.W.W.A. Specification C600 latest revision and manufacturer's recommendations.

When pipes are cut in the field, the cut or straight end shall have all sharp or rough edges removed before assembly.

c. Valves, Boxes, Manholes, Vaults and Fittings: Valves and fittings shall be placed where shown on the plans or as designated by the Engineer. Jointing shall be done as previously specified herein.

Unless otherwise specified or shown on the drawings, cast iron valve boxes shall be installed with all gate valves. Valve boxes shall be firmly supported to maintain centered and plumb alignment over the wrench nut of the valve, with box cover flush with the surface of the finished pavement or at such other level as may be directed by the Engineer.

All geared valves and such other valves as may be designated shall be set in masonry valve manholes or vaults with the wrench nuts readily accessible for operation through the manhole openings. Manholes shall be constructed in a manner that will permit minor valve repairs and to afford protection to the pipe from impact where it passes through the manhole or vault walls.

d. Bolts and Nuts: After final tightening of nuts, any such nuts accessible to tampering shall be "spot" welded to their bolts or threads slightly burred to prevent easy removal by unauthorized persons.

9-05.3.8 Backfilling and Grading

All excavation in trenches shall be backfilled to the original ground surface or to such grades as specified or shown on the drawings. The backfill shall begin as soon as practical after the pipe has been placed and shall thereafter be carried on as rapidly as the protection of the balance of the work will permit.

Complete cleanup shall proceed directly behind the backfilling to accommodate the return to normal conditions. The Contractor shall have sufficient equipment on the job to assure timely backfill and cleanup at all times.

Backfilling and compacting shall be done as thoroughly as possible so as to prevent after settlement. Depositing of the backfill shall be done so that shock of falling material will not injure the pipe or structures. Grading over and around all parts of the work shall be done as directed by the Engineer.

Granular material (sands) shall be deposited in the trench simultaneously on both sides of the pipe for the full width of the trench to a height at least six (6) inches above the top of the pipe, shovel placed and hand tamped to fill completely all spaces under and adjacent to the pipe.

Succeeding layers of backfill shall be free from pieces of rock, concrete, roots, stumps, tin cans, rubbish and other similar articles whose presence in the backfill, in the opinion of the Engineer, would cause excessive settlement of the trench, or damage to the pipe.

Backfilling shall be done in lifts of uniform layers not to exceed the depth shown in the compaction chart and each lift shall be completely compacted over the full width of the excavated area. Compacting shall continue until no more settlement occurs. Three feet of material over the top of the pipe shall be required before a vibratory or sheepsfoot roller may be used.

COMPACTION CHART

	Maximum Loose Soil Lift Height (Ft.)	
<u>Compactor Type</u>	<u>Sands</u>	<u>Plastic Soil</u>
Vibratory Roller (Vibro-Plus CK-11) or equal	4.0	Not Allowed
Sheepsfoot (150 PSI Minimum)	Not Allowed	2.0
Button Head Pneumatic	0.5	0.5
Plate Tamper	1.0	1.0
Plate Vibrator	1.0	Not Allowed

Special compaction shall be done around all manholes, catch basins, valve boxes, and other structures, and utilities by the use of pneumatic tampers, plate tampers, or plate vibrators with lifts not to exceed that shown in the COMPACTION CHART.

All deficiencies in the quantity of material for backfilling the trenches or for filling depressions caused by settlement shall be supplied by the Contractor. Any excess suitable material shall be hauled away and deposited and leveled where directed by the Engineer at no additional compensation.

No waste material or debris shall be deposited on any public or private property within the limits of the municipality without the written permission of the Engineer. Waste material and debris shall include, but not be limited, to trees, stumps, pieces of pipe, pieces of concrete, piece of asphaltic concrete, tin cans, or other waste material from the construction operations. All disposal areas shall be leveled off and the area shall have approximately one (1) foot of clean fill area on the top, all at no additional compensation.

The Contractor shall remedy at his own expense any defects that appear in the backfill for a period of one year following completion.

9-05.3.9 Testing and Disinfecting Mains

After the pipe has been laid including fittings, valves, and hydrants and the line has been backfilled in accordance with these specifications, all newly laid pipe, or any valved section thereof, unless otherwise directed by the Engineer, shall be subjected to hydrostatic pressure of 100 pounds per square inch. The duration of each such test shall be at least two hours. Water added to maintain the pressure shall not exceed the volume per 100 lineal feet of pipe being tested during the two hour test as specified in the following table:

<u>Pipe Size</u>	<u>Maximum Allowable Leakage in Gallons/100 ft. of Pipe/2 Hour Test</u>
12"	0.35 gallon

Each valved section of pipe shall be slowly filled with water and the specified test pressure, measured at the lowest point of elevation, shall be applied by means of a pump connected to the pipe in a satisfactory manner. The pump, pipe connection, gauges and all necessary apparatus shall be furnished by the Contractor. Gauges and measuring devices must meet with the approval of the Engineer and the necessary pipe taps made as directed. Before applying the specified test pressure, all air shall be expelled from the pipe. To accomplish this, taps shall be made, if necessary, at points of highest elevations, and afterward tightly plugged.

Any cracked or defective pipes, fittings, valves or hydrants discovered in consequence of the pressure test shall be removed and replaced by the Contractor with sound material in the manner provided and the test shall be repeated until satisfactory to the Engineer.

After the installation has been tested, the Contractor shall follow the disinfection procedures as required by Jefferson Parish Department of Public Utilities. The Contractor shall become thoroughly informed on these requirements.

Unless facilities are available for the introduction of either chlorine or heavily chlorinated water directly into the mains on their completion, chlorine disinfectant should be placed at each joint prior to jointing. The following table indicates the amount of calcium hypochlorite (65% available chlorine) that shall be added to each 20 foot length of pipe to furnish a solution containing the minimum amount of free chlorine.

<u>Pipe Size</u>	<u>Calcium Hypochlorite (65% available chlorine)</u>
12"	1.5 oz.

Only fresh disinfectants shall be used and the main filled with water and flushed not later than one week after the disinfectant has been added. The water (containing chlorine) shall be left in the pipe, being disinfected, for a minimum of twenty-four (24) hours.

9-05.3.10 Restoration of Ground Surfaces

Wherever the surface of the ground is removed or disturbed by the Contractor's operation the Contractor shall restore, replace or rebuild all such surfaces to a condition at least equal to its condition at time of removal.

If the alignment of the water main and its appurtenances, as shown on the plans, is alongside or parallel to a paved roadway, but the proximity of such alignment to the paving does not warrant any damage or removal of such paving, the Contractor shall replace or repair the paving which he has removed or damaged at no additional compensation.

9-05.3.11 Workmanship and Cleanup

Upon completion of the contract, the Contractor shall dismantle and remove all construction plant, equipment, appliances, barricades and surplus materials; shall clean the sewers and other structures and all streets or other services used by him and shall do such incidental work as may be necessary to leave the work or premises occupied by him in a neat workmanlike condition. This work shall be done with a minimum of inconveniences to the public or public travel.

9-05.4 Gas, Electric, and Telephone Lines

It is anticipated that the existing gas, electric and telephone lines along Orpheum Avenue shall be relocated by their respective owners prior to the commencement of construction by the Contractor. The Contractor shall confirm that these lines have been relocated and obtain the new locations of these utilities from the respective utility companies.

The existing gas line attached to the existing pedestrian bridge will be capped off by its owner prior to the required demolition of the bridge by the Contractor. A new line shall be established on the new bridge by its owner following completion of construction by the Contractor.

9-05.5 Measurement and Payment

Payment for relocation of the 8-inch sewer main and all related work will be paid under Bid Item No. 20, per lump sum.

Payment for relocation of the 12-inch water main and all related work including establishing a new line on the new pedestrian bridge will be paid under Bid Item No. 21, per lump sum.

Payment for removal of terminated lines, manholes, valves and hydrants will be made under Bid Item No. 2, per lump sum.

9-06 TEMPORARY LOADING DOCK

9-06.1 General

It is brought to the Contractor's attention that he must allow boat traffic in the canal during construction. In addition, the Contractor shall provide a temporary loading/unloading dock for fishing vessels, which shall be a barge measuring 10' X 30' minimum. The Contractor shall be required to move this barge up and down the canal so as to be out of the way of construction. This barge shall have an access walkway to the dry land meeting OSHA standards and shall be moored to the Jefferson side of the canal. The Contractor is reminded that he must carry the proper maritime insurance for this action.

Boats will not be allowed to tie-up in the construction area except for loading and unloading at the temporary dock.

9-06.2 Payment

Payment will be at the contract lump sum price for Bid Item No. 22, "Temporary Loading Dock", and shall include providing the barge, moving the barge as required, maintaining a proper level of safety on the barge, and providing navigation lights (see paragraph 1-36 of the specifications).

EXCAVATION AND FLOOD PROTECTION
OF THE
17TH STREET CANAL

SECTION 10
BID PROPOSAL AND LIST OF EXPERIENCE

10-01 BID PROPOSAL

MADE BY _____

ADDRESS _____

CITY AND STATE _____

DATE _____ do hereby declare that, with the sole exception of authorized subcontractors, _____ the only person _____ interested in this proposal, and that no other person _____ than the one _____ herein named has _____ any interest herein or in the contract proposed to be taken: that it is made without any connection with any other person or persons making proposal for the same work, and that it is in all respects fair and without collusion or fraud; also that no member of the Sewerage and Water Board, or of the City Council of the City of New Orleans, or any officer or employee of the City of New Orleans, or of the several boards thereof, who are by law excluded from participation herein, are directly or indirectly interested herein, or in furnishing the supplies or doing the work to which it relates, or in furnishing bond, or in any portion of the profits herein.

And _____ do further declare that _____ have carefully examined the annexed specifications and the drawings furnished, and hereby propose to furnish the material and to do the work called for in the specifications, and shown in the drawings in the manner and under the condition required at prices stated herein which are in words and figures as follows:

BID FORM
(Page 1 of 6)

ITEM NO.

1 Mobilization and Demobilization.

THE LUMP SUM PRICE OF

_____ Dollars

(\$ _____) Lump Sum

\$ _____

2 Demolition and Removal of Structures
and Obstructions.

THE LUMP SUM OF

_____ Dollars

(\$ _____) Lump Sum

\$ _____

3A Removal of Existing Tied-Back Sheet
Pile Wall on the Orleans Side.

THE LUMP SUM PRICE OF

_____ Dollars

(\$ _____) Lump Sum

\$ _____

3B Removal of the Existing Pedestrian Bridge.

THE LUMP SUM PRICE OF

_____ Dollars

(\$ _____) Lump Sum

\$ _____

4 Dredging and Disposal of approximately
52,853 cubic yards of material from the
17th Street Canal between Lake Pontchartrain
and the Hammong Highway Bridge.

THE UNIT PRICE OF

_____ Dollars

(\$ _____) Each Cubic Yard

\$ _____

BID FORM (CONT.)
(Page 2 of 6)

ITEM NO.

5 Degrading and Disposal of approximately
9,415 cubic yards of embankment material.

THE UNIT PRICE OF

_____ Dollars

(\$ _____) Each Cubic Yard

\$ _____

6 Raising of approximately 804 cubic yards
of embankment.

THE UNIT PRICE OF

_____ Dollars

(\$ _____) Each Cubic Yard

\$ _____

7 Installation of a Tied-Back Sheet Pile
Wall on the Jefferson Side from Baseline
Sta. 541+14 to Baseline Sta. 549+67.

THE LUMP SUM PRICE OF

_____ Dollars

(\$ _____) Lump Sum

\$ _____

8 Installation of a Tied-Back Sheet Pile
Wall on the Jefferson Side from Baseline
Sta. 549+67 to Baseline Sta. 552+69.

THE LUMP SUM PRICE OF

_____ Dollars

(\$ _____) Lump Sum

\$ _____

9 Installation of a Tied-Back Sheet Pile
Wall on the Orleans Levee from Baseline
"B" Sta. 539+85.6 to Baseline "B" Sta.
540+58 and a Cantilever Sheet Pile Wall
from Baseline "B" Sta. 540+58 to Base-
line "B" Sta. 540+86.4.

THE LUMP SUM PRICE OF

_____ Dollars

(\$ _____) Lump Sum

\$ _____

BID FORM (CONT.)
(Page 3 of 6)

ITEM NO.

- 10 Installation of a Cantilever Sheet Pile Wall on the Orleans Levee from Baseline "B" Sta. 540+86.4 to Baseline Sta. 545+83. (Note the break in sheet pile at the 60" diameter concrete pipes.)

THE LUMP SUM PRICE OF

_____ Dollars

(\$ _____) Lump Sum

\$ _____

- 11 Installation of a Cantilever Sheet Pile Floodwall on the Orleans Levee from Baseline Sta. 545+83 to Baseline Sta. 552+15 and on the Orleans East-West Return Levee opposite Baseline Sta. 545+83.

THE LUMP SUM PRICE OF

_____ Dollars

(\$ _____) Lump Sum

\$ _____

- 12 Installation of a Pile-Braced Sheet Pile Wall on the Orleans Levee opposite Baseline Sta. 552+15.

THE LUMP SUM PRICE OF

_____ Dollars

(\$ _____) Lump Sum

\$ _____

- 13 Turfing of approximately 1.1 acres of disturbed areas and newly constructed embankments.

THE UNIT PRICE OF

_____ Dollars

(\$ _____) Each Acre

\$ _____

BID FORM (CONT.)
(Page 4 of 6)

ITEM NO.

14 Construction of Pedestrian Bridge.

THE LUMP SUM PRICE OF

_____ Dollars

(\$ _____) Lump Sum

\$ _____

15 Placement of approximately 3,520 square yards of Riprap on the Orleans side of the canal.

THE UNIT PRICE OF

_____ Dollars

(\$ _____) Each Square Yard

\$ _____

16 Rebuilding of Orpheum Avenue from Baseline Sta. 541+09 to Baseline Sta. 548+50 and Construction of Paved Parking Area from Baseline Sta. 542+57 to Baseline Sta. 552+55.

THE LUMP SUM PRICE OF

_____ Dollars

(\$ _____) Lump Sum

\$ _____

17A Installation of 92 - 40' Timber Piles for Boat Slips.

THE UNIT PRICE OF

_____ Dollars

(\$ _____) Each

\$ _____

17B Installation of 30 - 20' Timber Piles for Boat Slips.

THE UNIT PRICE OF

_____ Dollars

(\$ _____) Each

\$ _____

BID FORM (CONT.)

(Page 5 of 6)

ITEM NO.

17C Installation of approximately 6.8
Thousand Board Feet of Treated Timber
for Boat Slips.

THE UNIT PRICE OF

_____ Dollars

(\$ _____) Each Thousand Board Foot

\$ _____

18 Construction and Placement of a Muck
Retainer across the canal at the southern
limit of dredging.

THE LUMP SUM PRICE OF

_____ Dollars

(\$ _____) Lump Sum

\$ _____

19 Construction of a Headwall Structure and
Concrete Wall on the Orleans Levee
opposite Baseline Sta. 545+39.

THE LUMP SUM PRICE OF

_____ Dollars

(\$ _____) Lump Sum

\$ _____

20 Relocation of Sewer Main Along
Orpheum Avenue.

THE LUMP SUM PRICE OF

_____ Dollars

(\$ _____) Lump Sum

\$ _____

21 Relocation of Water Main Along Orpheum
Avenue and Across Pedestrian Bridge

THE LUMP SUM PRICE OF

_____ Dollars

(\$ _____) Lump Sum

\$ _____

BID FORM (CONT.)
(Page 6 of 6)

ITEM NO.

22 Providing and Maintaining Temporary
Loading/Unloading Dock.

THE LUMP SUM PRICE OF

_____ Dollars

(\$ _____) Lump Sum

\$ _____

TOTAL FOR COMPARISON OF BIDS

\$ _____

23 Piles Pulled and found to be in good
condition. (See Paragraphs 4-05.3 and
4-06.2.2 of the Contract Specifications.

THE UNIT PRICE OF

_____ Dollars

(\$ _____) Each Linear Foot

_____ understand that a "Purchase Order" will be issued after the contract has been signed as _____ authority to purchase materials for use on this contract. The maximum delivery period after which a "Work Order" will be issued is ninety (90) calendar days from the date of the "Purchase Order". _____ propose to complete all work, in accordance with the plans and specifications and to the complete satisfaction of the General Superintendent within one hundred twenty (120) calendar days from the issuance of the "Work Order".

_____ agree that in default of completing all work within the period of time stipulated above to be bound in the amount of two hundred fifty (\$250.00) dollars per day liquidated damage not as penalty, for each calendar day beyond the stipulation time.

SIGNATURE OF BIDDER _____

BY _____
(TITLE OF OFFICER, IF A FIRM OR CORPORATION)

DATE _____

ADDRESS OF BIDDER:
STREET AND NO. _____

CITY _____

PARISH AND COUNTY _____

STATE _____

TELEPHONE NUMBER _____
(NIGHT, WEEKEND, HOLIDAY)

IF BIDDER IS A FIRM FILL OUT THE FOLLOWING:

NAME OF ALL MEMBERS OF FIRM	ADDRESSES
_____	_____
_____	_____
_____	_____
_____	_____

If Bidder is a corporation, fill out the following:

Name of President _____

Name of Secretary _____

The New Orleans or Nearest Representative is:

Name _____

Street Address _____

City and State _____

CERTIFICATE OF QUALIFICATION OF BIDDER

CERTIFY THAT _____ LICENSED BY THE LOUISIANA
STATE LICENSING BOARD FOR CONTRACTORS, UNDER LOUISIANA REVISED
STATUTES 37:2157 THROUGH 37:2163, AS AMENDED, AND _____
QUALIFIED TO PERFORM THE WORK CALLED FOR IN THE FOREGOING
SPECIFICATIONS, AND HOLD LICENSE NUMBER _____ AS
EVIDENCE THEREOF.

SIGNATURE OF BIDDER:

BY: _____

(SEAL)

ADDENDA:

The above signed acknowledges receipt of the following addenda:

No. _____ Dated _____

No. _____ Dated _____

No. _____ Dated _____

10-02 LIST OF EXPERIENCE

LISTED BELOW ARE CONTRACTS OF A SIMILAR NATURE WHICH ARE EITHER COMPLETED OR UNDER CONSTRUCTION.

<u>CONTRACT DESCRIPTION</u>	<u>DATE</u>	<u>AMOUNTS</u>
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