

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT			1. CONTRACT ID CODE	PAGE OF PAGES	
			J	1	48
2. AMENDMENT/MODIFICATION NO. 0002	3. EFFECTIVE DATE 06-Jun-2007	4. REQUISITION/PURCHASE REQ. NO.		5. PROJECT NO.(If applicable)	
6. ISSUED BY USACE, CONTRACTING DIVISION ATTN: CEMVN-CT, ROOM 172 7400 LEAKE AVE. NEW ORLEANS LA 70118-3651	CODE W912P8	7. ADMINISTERED BY (If other than item 6) <b>See Item 6</b>		CODE	
8. NAME AND ADDRESS OF CONTRACTOR (No., Street, County, State and Zip Code)			X	9A. AMENDMENT OF SOLICITATION NO. W912P8-07-R-0054	
			X	9B. DATED (SEE ITEM 11) 22-Mar-2007	
				10A. MOD. OF CONTRACT/ORDER NO.	
				10B. DATED (SEE ITEM 13)	
CODE	FACILITY CODE				
11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS					
<input checked="" type="checkbox"/> The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offer <input checked="" type="checkbox"/> is extended, <input type="checkbox"/> is not extended. <p>Offer must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended by one of the following methods:          (a) By completing Items 8 and 15, and returning <u>1</u> copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted;          or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.</p>					
12. ACCOUNTING AND APPROPRIATION DATA (If required)					
13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.					
A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.					
B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(B).					
C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:					
D. OTHER (Specify type of modification and authority)					
E. IMPORTANT: Contractor <input type="checkbox"/> is not, <input type="checkbox"/> is required to sign this document and return _____ copies to the issuing office.					
14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)  The above numbered solicitation for Westbank and Vicinity, New Orleans, LA, Hurricane Protection Project, Lake Cataouatche Levee Enlargement, Lake Cataouatche Pump Station to Segnette State Park, Jefferson Parish, LA, is amended as shown on the attached pages.  PROPOSAL DUE DATE: A PROPOSAL DUE DATE OF 10 JULY 2007, 2:00 PM LOCAL TIME, NEW ORLEANS, LA, IS HEREBY ESTABLISHED.					
Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.					
15A. NAME AND TITLE OF SIGNER (Type or print)			16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)		
			TEL: _____ EMAIL: _____		
15B. CONTRACTOR/OFFEROR  _____ (Signature of person authorized to sign)	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA  BY _____ (Signature of Contracting Officer)		16C. DATE SIGNED  06-Jun-2007	

## SECTION 00010

Delete pages 00010-3, 4, and 5 in their and substitute the attached revised pages 00010-3, 4, and 5 therefore.

## SECTION 00130

Page 2, paragraph 1.5(2). Delete this paragraph in its entirety and substitute the following therefore:

“(2) Technical Approach. Offerors shall provide proposed plans to be used in accomplishing the construction of the flood protection system. The plan shall demonstrate a logical sequencing of all activities (including interdependencies of the activities) necessary to complete the work within the required performance period. The plan shall list: specific equipment available and proposed for use at each major activity, the daily production rate required, and the number of such crews proposed to work concurrently; the number of dump trucks contemplated for use in transporting material to all segments of the work and feasible plan for providing them; and identify required manpower (labor and skilled operators to staff each crew) and Offeror’s plan to provide them through its own employees or specific available resources. The plan shall provide specific detail on strategy to accomplish the major activities of the work, including but not be limited to: the construction of the proposed site and levee access and haul roads; construction of the mandatory drainage canal and backfill of the abandoned and existing drainage canals, including proposed locations of optional crossings and lateral drainage canals; completion of construction of the entire levee embankment and berm to the advanced levee section (as shown on the drawings) for the entire levee reach by July 31, 2008; construction of the final levee embankment and berm to final section by the completion of the contract duration; construction of the levee and embankment to final section; contractor borrow source plan (the plan shall be submitted in accordance with the requirements in 02318-3.4.1.1.1); identify required local permits to be obtained prior to any mandatory Contractor borrow operations; Offerors will be evaluated on their understanding of and capability to meet the work requirements.”

## SECTION 00700

Page 79, paragraph 52.236-4 PHYSICAL DATA (APR 1984), subparagraph (c). Delete this subparagraph in its entirety and substitute the following therefore.

“(c) Transportation Facilities. The project is located in the area of Westwego, LA. Access to the construction site is available by roads. East access is from Lapalco Boulevard and Nicole Boulevard, through the Local Sponsor’s privately owned, West Jefferson Levee District’s Drake Stockpile Yard via the east access/haul road. The east access/haul road is a granular surfaced road. There is no Contractor west access (Avondale Garden Road) and is annotated as no

access on the drawings. The Contractor should also be aware that truck routes and truck speed limits are subject to change and shall check with the appropriate state, parish and/or local officials for the applicable regulations. Details for the operation, construction and maintenance of the east access/haul road and any other Contractor haul roads are specified in Section 02351 and the 01100 General Provision entitled Safety Provisions, subparagraphs 3(g)(1) thru (6).”

SECTION 01100

1. Page 5, subparagraphs 3(g)(7) and (8). Delete these subparagraphs in their entirety.

2. Page 5, subparagraph 3(h). Delete this subparagraph in its entirety and substitute the following therefore.

“(h) Security Fence. All gates shall be closed and padlocked at the end of each work day. Extra keys shall be provided to the CORP and to the levee district. The Contractor shall provide and maintain on the fence "KEEP OUT" signs every 25 feet facing out from the work. “

3. Page 7, subparagraph 4(b). Delete the last sentence of the paragraph.

4. Page 11, subparagraph 9(e), TABLE 1. Delete the 3<sup>rd</sup> row of this table and replace with the following:

Levee baseline station (LBS) 309+00 to 310+00	Jefferson Parish Department of Drainage Pump Stations	Lake Cataouatche drainage pump yard for pumps Nos.1 and 2 - No Contractor access.
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5. Page 12, subparagraph 9(e), table entitled OWNERS POINT OF CONTACT. Delete all information given for NorthStar/BellSouth including Lloyd Massey and telephone number. Delete all information given for Jefferson Parish Dept. of Water including Mr. Mitch Theriot and telephone number.

6. Pages 13 and 14, subparagraphs 9(h), (i), (j), and (k). Delete these subparagraphs in their entirety and substitute the following therefore.

“(h) Jefferson Parish Department of Drainage Pump Stations (DDPS) owns, operates and maintains Lake Cataouatche Pump Stations No. 1 and 2. The Contractor shall not use this route from Hwy 90 to the pump stations for access.

(i) Shell Pipeline Co. owns an 8 inch crude oil pipeline, Sta. 312+00, out of service and removed from the project’s ROW. Existing pile bents (9-two pile and cross member structures), shall be removed by the Contractor 5 feet below existing ground surface and the cut-offs stockpiled in the designated area. The Contractor shall notify the owner upon completion of stockpiling. The owner is

responsible for the removal of pile bent cut-offs from the stockpile area (and the project site).”

7. Page 14, subparagraph 12(a). Add “The Contractor remains responsible for obtaining all local and state permits see 02318-3.5.4.” to the end of this subparagraph.

8. Page 18, paragraph 14. Delete this paragraph in its entirety and substitute the following therefore.

“14. SPECIAL WORK REQUIREMENTS

(a) The placement of surfacing materials on roads, ramps, levee marker pads and installation of levee baseline station markers (see (c), below), shall not commence until after all earthwork phases of the levee construction, (including fertilizing, seeding and mulching), have been completed.

(b) Install all WJLD levee baseline station markers and pads at the baseline stations shown on the drawings. See Section 02731 and drawings for details.

(c) By 31 July 2008, the Contractor shall complete the advanced levee embankment and berms to the lines and grades for the entire project limits, complying with the construction phases, as shown on the drawings, before proceeding with construction above these line and grades. The Contractor shall perform all incidental work necessary to facilitate the above required work.

(d) The Contractor is hereby informed that time allowed, for the overall contract completion and as described in paragraph (c) above, for the advanced levee construction, have been established as the shortest reasonable durations, for completion of the final levee section and the advanced levee section and that the Contractor shall make any and all provisions necessary (multiple crews, overtime, concurrent operations, access-haul road improvements and maintenance, equipment for operations, etc.) to accomplish the work within the available time period. Payment for these additional provisions shall be included in the items for which the work is incidental thereto.”

9. Page 19, paragraph 18. Delete this paragraph in its entirety.

SECTION 01312

Insert the attached new Section 01312, QUALITY CONTROL SYSTEM (QCS)

SECTION 01321

Insert the attached new Section 01321, CONSTRUCTION PROGRESS DOCUMENTATION

## SECTION 01572

Delete this section in its entirety and replace it with the revised attached Section 01572 therefore.

## SECTION 02318

1. Page 4, paragraph 3.1.2.2.2. Delete this paragraph in its entirety and substitute the following therefore.

“The Contractor shall not use the west access road (Avondale Garden Road) from Hwy 90 to access the borrow pit or work site for any reason”.

2. Page 5, paragraph 3.1.2.3. In the last two sentences, delete “re-watering” and “, during rewatering operations,” respectively.

3. Page 6, paragraph 3.2.2. Delete the last sentence and replace it with the following:

"Canal transitions shall be excavated in the wet. After the completion of the mandatory drainage canal excavation a clay plug shall be constructed in the existing drainage canal, in the vicinity of B/L station 479+00, as shown on the drawings. The clay plug or any other filling operations shall not impede the new drainage canal function."

4. Page 7, paragraph 3.3.1. Delete this paragraph in its entirety and substitute the following therefore.

“If the Contractor elects to construct an optional culvert crossing (see paragraph 3.6), and/or widening a existing drainage lateral, and/or excavate a new drainage lateral, and/or construct temporary stockpiles, and/or elects to construct retaining dikes for the installation of any canal crossings or borrow pit operations; then the Contractor shall employ the services of a Registered Professional Engineer with expertise in geotechnical engineering to ensure safety. Additionally, the Contractor is required to furnish a stamped excavation plan for the Contractor furnished borrow pit operations. The Registered Professional Engineer shall stamp the Contractor’s geotechnical plans and show as a minimum feature locations, stockpile heights, excavation depths, water surfaces and slopes and identify the soil strength determination/assumptions, computations and submit to the COR for an informational review.”

5. Page 9, paragraph 3.4.1.1.2. Add “The Contractor is advised additional permits may be required per state and local agencies, see 3.5.4.” to the end of this paragraph.

6. Page 10, paragraph 3.5.4. Delete this paragraph in its entirety and substitute the following therefore.

#### “3.5.4 Permits

The Contractor shall ensure all state and local permits have been secured. A Government Listed and/or Non Government Listed Borrow Sources does not ensure these permits have been obtained by the landowner or any agents for the landowner. Additional permits are required when the borrow pit excavations are located within 1,500 feet from levee centerline and/or drainage structures of the Mississippi River and 300 feet of hurricane protection levee centerline. The Contractor is also responsible for compliance with any permit requirements set by the state and local agency, i.e. backfilling requirements, etc. Contract impacts due to pit locations and state and local agency requirements are not the responsibility of the Government.”

7. Page 10, paragraph 3.5.10.1. Delete this paragraph in its entirety and substitute the following therefore.

“A Non-Government Listed, Contractor Furnished Borrow Source is a Contractor furnished borrow source which has been researched, data developed and documentation submitted to the Government, which is not Government Listed (see paragraph 3.5.11). All data provided by the Contractor to the COR, likely, does not possess any previous Government involvement and/or reviews or approval”.

8. Page 12, paragraph 3.5.10.3, and subparagraph (3). Add “, in accordance with the requirements of set in paragraph 3.5.11.4.” to the end of the paragraph:

9. Page 14. Add the following new paragraph after paragraph 3.5.11.3.

#### “3.5.11.4 Permits

The Contractor shall obtain and provide the COR all State of Louisiana and local agency permits with approvals and compliance requirements, see paragraph 3.5.4.”

10. Page 14, paragraph 3.6. Delete this paragraph in its entirety and substitute the following therefore.

“The Contractor’s optional crossings within the existing drainage canal, prior to completing and placing the mandatory drainage canal into operation, and/or prior to excavating a new drainage lateral and/or prior to excavating an existing drainage lateral must be approved by the Jefferson Parish Drainage District. The Contractor shall furnish the COR the same design package as submitted to JPDD for review and approval. The official JPDD letter of approval and approved designs shall be submitted by the Contractor to the COR prior to construction of any optional canal crossings and/or laterals. The Contractor should allow 30 days to obtain the drainage canal crossing design and/or lateral excavations design approval and a letter of approval for the canal crossings from the JPDD. Construction of these optional crossings and/or laterals must be accomplished without unwatering the canal nor any excavation of the existing canal geometry at these installation locations. “

SECTION 02332

Delete this section in its entirety and replace it with the revised attached Section 02332 therefore.

SECTION 02830

Delete this section in its entirety.

DRAWINGS

Delete Sheet Identification Numbers 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 21, 22, and 34 and replace with the attached revised Sheet Identification Numbers 1, 2, 3, 4, 5A, 5B, 5C, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 21, 22, and 34 therefore.

SECTION 00010 - BIDDING SCHEDULE

West Bank and Vicinity, New Orleans, Louisiana, Hurricane Protection Project  
 Lake Cataouatche Levee Enlargement. Lake Cataouatche Pump  
 Station to Segnette State Park, Jefferson Parish, Louisiana

Item	Description	Estimated Quantity	Unit	Unit Price	Estimated Amount
0001	Mobilization and Demobilization	1	LS		
0002	Permanent Truck Wash-Down Rack	1	LS		
0003	Temporary Truck Wash-Down Rack				
0003AA	First Truck Wash-Down Rack	1	EA		
0003AB	All Over 1 Truck Wash-Down Rack	1	EA		
0004	Clearing and Grubbing	1	LS		
0005	Borrow Pit Development	1	LS		
0006	Mandatory Drainage Canal Excavation	138,420	CY		
0007	Mandatory Drainage Canal Maintenance	1	LS		
0008	Geotextile Separator	226,300	SY		
0009	Embankment, Compacted Fill	658,730	CY		
0010	Embankment, Uncompacted Fill	1,017,880	CY		
0011	Timber Bridge Mat at B/L Sta. 476+04	1	LS		
0012	Surfacing	4,500	CY		
0013	Fertilizing, Seeding and Mulching	125	AC		
0014	Levee Markers and Pads	1	LS		

TOTAL:           \$

Award will be made as a whole to one bidder.

NOTE 1: Bidders shall furnish unit prices for each item listed in the Schedule requiring a unit price. If the bidder fails to insert a unit price in the appropriate blank for required item(s), but does furnish an extended total, or an estimated amount for such item(s), the Government shall deem the unit price to be the quotient obtained by dividing the extended amount for that line item by the quantity. IF A BIDDER OMITTS BOTH THE UNIT PRICE AND THE EXTENDED TOTAL OR ESTIMATED AMOUNT FOR ANY ITEM, ITS BID SHALL BE DECLARED NON-RESPONSIVE AND THEREFORE INELIGIBLE FOR AWARD.

SECTION 00010 - BIDDING SCHEDULE

West Bank and Vicinity, New Orleans, Louisiana, Hurricane Protection Project  
Lake Cataouatche Levee Enlargement. Lake Cataouatche Pump  
Station to Segnette State Park, Jefferson Parish, Louisiana

Item	Description	Estimated Quantity	Unit	Unit Price	Estimated Amount
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NOTE 2: Any bid may be rejected if the Contracting Officer determines in writing that it is unreasonable as to price. Unreasonableness of price includes not only total price of bid, but the price for individual line items as well. Any bid may be rejected if the prices for any line items or sub line items are materially unbalanced (See FAR 14.404-2).

NOTE 3: THE NOTICE TO PROCEED (NTP): The successful bidder is advised that performance and payment bonds shall be submitted in accordance with the time frame in block 12B of SF 1442. The NTP will be issued immediately after verification of acceptable performance and payment bonds. Within seven (7) days after issuance of the NTP, the Contractor shall initiate a meeting to discuss the submittal process with the Area or Resident Engineer or his authorized representative. Physical work cannot start until the Accident Prevention Program, Contractor Quality Control Plan, and other submittals which may be required, have been submitted and approved and all preliminary meetings called for under the contract, have been conducted.

EVALUATION OF SUBDIVIDED ITEMS. (EFARS 52.211-5000 - MAR 95).

Item No. 0003 are subdivided into two or more estimated quantities and are to be separately priced. The Government will evaluate each of these items on the basis of total price of its sub-items.

(End of Clause)

VARIATIONS IN ESTIMATED QUANTITIES - SUBDIVIDED ITEMS. (EFARS 52.211-5001 - MAR 95).

The Variations in Estimated Quantities Subdivided Items clause is applicable only in Item No. 0003.

a. Variations from the estimated quantity in the actual work performed under any second or subsequent sub-item or elimination of all work under such a second or subsequent sub-item will not be the basis for an adjustment in contract unit price.

b. Where the actual quantity of work performed for Item No 0003 is less than 85% of the quantity of the first sub-item listed under such items, the Contractor will be paid at the contract unit price for that sub-item for the actual quantity of work performed and, in addition, an equitable adjustment in contract price shall be made in accordance with the clause FAR 52.211-18, Variation in Estimated Quantity.

c. If the quantity of work performed under Item No. 0003 exceeds 115% or is less than 85% of the total estimated quantity of the sub-items under that item, and/or if the quantity of work performed under the second sub-item or any subsequent sub-item under Item No. **NONE** exceeds 115% or is less than 85% of the estimated quantity of any such sub-item, and if such variation causes an increase or a decrease in the time required for performance of this contract, the contract completion time will be adjusted in accordance with the clause FAR 52.211-18, Variation in Estimated Quantity.

(End of Clause)

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## SECTION 01312 - QUALITY CONTROL SYSTEM (QCS)

### PART 1 GENERAL

#### 1.0 MEASUREMENT AND PAYMENT

No separate measurement and payment will be made for providing and maintaining an effective Quality Control System, and all costs associated therewith shall be included in the applicable unit prices or lump-sum prices contained in the Bidding Schedule.

#### 1.1 Contract Administration

The Government will use the Resident Management System for Windows (RMS) to assist in its monitoring and administration of this contract. The Contractor shall use the Government-furnished Construction Contractor Module of RMS, referred to as QCS, to record, maintain, and submit various information throughout the contract period. The Contractor module, user manuals, updates, and training information can be downloaded from the RMS web site. This joint Government-Contractor use of RMS and QCS will facilitate electronic exchange of information and overall management of the contract. QCS provides the means for the Contractor to input, track, and electronically share information with the Government in the following areas:

- Administration
- Finances
- Quality Control
- Submittal Monitoring
- Scheduling
- Import/Export of Data

##### 1.1.1 Correspondence and Electronic Communications

For ease and speed of communications, both Government and Contractor will, to the maximum extent feasible, exchange correspondence and other documents in electronic format. Correspondence, pay requests and other documents comprising the official contract record shall also be provided in paper format, with signatures and dates where necessary. Paper documents will govern, in the event of discrepancy with the electronic version.

##### 1.1.2 Other Factors

Particular attention is directed to Contract Clause, "Schedules for Construction Contracts", Contract Clause, "Payments", Section 01330, SUBMITTAL PROCEDURES, and Section 01451, CONTRACTOR QUALITY CONTROL, which have a direct relationship to the reporting to be accomplished through QCS. Section 01321, CONSTRUCTION PROGRESS DOCUMENTATION scheduling requirements

will also have a direct relationship to the reporting to be accomplished through QCS. There is no separate payment for establishing and maintaining the QCS database; all costs associated therewith shall be included in the contract pricing for the work.

## 1.2 QCS SOFTWARE

QCS is a Windows-based program that can be run on a stand-alone personal computer or on a network. The Government will make available the QCS software to the Contractor after award of the construction contract. Prior to the Pre-Construction Conference, the Contractor shall be responsible to download, install and use the latest version of the QCS software from the Government's RMS Internet Website. Upon specific justification and request by the Contractor, the Government can provide QCS on CD-ROM. Any program updates of QCS will be made available to the Contractor via the Government RMS Website as they become available.

## 1.3 SYSTEM REQUIREMENTS

The following is the minimum system configuration that the Contractor shall have to run QCS:

### **QCS System**

#### **Hardware**

IBM-compatible PC with 1000 MHz Pentium or higher processor

256+ MB RAM for workstation / 512+ MB RAM for server

1 GB hard drive disk space for sole use by the QCS system

Compact Disk (CD) Reader 8x speed or higher

SVGA or higher resolution monitor (1024x768, 256 colors)

Mouse or other pointing device

Windows compatible printer. (Laser printer must have 4 MB+ of RAM)

Connection to the Internet, minimum 56k BPS

#### **Software**

MS Windows 2000 or higher

Word Processing software: MS Word 2000 or newer

Latest version of: Netscape Navigator, Microsoft Internet Explorer, or other browser that supports HTML 4.0 or higher

Electronic mail (E-mail) MAPI compatible

Virus protection software that is regularly upgraded with all issued manufacturer's updates

## 1.4 RELATED INFORMATION

### 1.4.1 QCS User Guide

After contract award, the Contractor shall download instructions for the installation and use of QCS from the Government RMS Internet Website. In case of justifiable difficulties, the Government will provide the Contractor with a CD-ROM containing these instructions.

### 1.4.2 Contractor Quality Control (CQC) Training

The use of QCS will be discussed with the Contractor's QC System Manager during the mandatory CQC Training class.

## 1.5 CONTRACT DATABASE

Prior to the pre-construction conference, the Government shall provide the Contractor with basic contract award data to use for QCS. The Government will provide data updates to the Contractor as needed, generally by using the Government's SFTP repository built into QCS import/export function. These updates will generally consist of submittal reviews, correspondence status, QA comments, and other administrative and QA data.

## 1.6 DATABASE MAINTENANCE

The Contractor shall establish, maintain, and update data for the contract in the QCS database throughout the duration of the contract. The Contractor shall establish and maintain the QCS database at the Contractor's site office. Submit data updates to the Government (e.g., daily reports, submittals, RFI's, schedule updates, payment requests, etc.) using the Government's SFTP repository built into QCS export function. If permitted by the Contracting Officer, a CD-ROM may be used instead of the SFTP repository (see Paragraph DATA SUBMISSION VIA CD-ROM). The QCS database typically shall include current data on the following items:

## 1.6.1 Administration

### 1.6.1.1 Contractor Information

The database shall contain the Contractor's name, address, telephone numbers, management staff, and other required items. Within 14 calendar days of receipt of QCS software from the Government, the Contractor shall deliver Contractor administrative data in electronic format.

### 1.6.1.2 Subcontractor Information

The database shall contain the name, trade, address, phone numbers, and other required information for all subcontractors. A subcontractor must be listed separately for each trade to be performed. Each subcontractor/trade shall be assigned a unique Responsibility Code, provided in QCS. Within 14 calendar days of receipt of QCS software from the Government, the Contractor shall deliver subcontractor administrative data in electronic format.

### 1.6.1.3 Correspondence

All Contractor correspondence to the Government shall be identified with a serial number. Correspondence initiated by the Contractor's site office shall be prefixed with "S". Letters initiated by the Contractor's home (main) office shall be prefixed with "H". Letters shall be numbered starting from 0001. (e.g., H-0001 or S-0001). The Government's letters to the Contractor will be prefixed with "C".

### 1.6.1.4 Equipment

The Contractor's QCS database shall contain a current list of equipment planned for use or being used on the jobsite, including the most recent and planned equipment inspection dates.

### 1.6.1.5 Management Reporting

QCS includes a number of reports that Contractor management can use to track the status of the project. The value of these reports is reflective of the quality of the data input, and is maintained in the various sections of QCS. Among these reports are: Progress Payment Request worksheet, QA/QC comments, Submittal Register Status, Three-Phase Inspection checklists.

### 1.6.1.6 Request For Information

Exchange all Requests For Information (RFI) using the Built-in RFI generator and tracker in QCS.

## 1.6.2 Finances

### 1.6.2.1 Pay Activity Data

The QCS database shall include a list of pay activities that the Contractor shall develop in conjunction with the construction schedule. The sum of all pay activities shall be equal to the total contract amount, including modifications. Pay activities shall be grouped by Contract Line Item Number (CLIN), and the sum of the activities shall equal the amount of each CLIN. The total of all CLINs equals the Contract Amount.

### 1.6.2.2 Payment Requests

All progress payment requests shall be prepared using QCS. The Contractor shall complete the payment request worksheet and include it with the payment request. The work completed under the contract, measured as percent or as specific quantities, shall be updated at least monthly. After the update, the Contractor shall generate a payment request report using QCS. Submit the payment request, prompt payment certification, and payment invoice with supporting data using the Government's SFTP repository built into the QCS export function. If permitted by the Contracting Officer, e-mail or a CD-ROM may be used. A signed paper copy of the approved payment request is also required, which shall govern in the event of discrepancy with the electronic version.

## 1.6.3 Quality Control (QC)

QCS provides a means to track implementation of the 3-phase QC Control System, prepare daily reports, identify and track deficiencies, document progress of work, and support other Contractor QC requirements. The Contractor shall maintain this data on a daily basis. Entered data will automatically output to the QCS generated daily report. The Contractor shall provide the Government a Contractor Quality Control (CQC) Plan within the time required in Section 01451, CONTRACTOR QUALITY CONTROL. Within seven calendar days of Government acceptance, the Contractor shall submit a QCS update reflecting the information contained in the accepted CQC Plan: schedule, pay activities, features of work, submittal register, QC requirements, and equipment list.

### 1.6.3.1 Daily Contractor Quality Control (CQC) Reports.

QCS includes the means to produce the Daily CQC Report. The Contractor may use other formats to record basic QC data. However, the Daily CQC Report generated by QCS shall be the Contractor's official report. Summarize data from any supplemental reports by the Contractor and consolidate onto the QCS-generated Daily CQC Report. Submit daily CQC Reports as required by Section 01451, CONTRACTOR QUALITY CONTROL. Electronically submit reports to the Government within 24

hours after the date covered by the report. Also provide the Government a signed, printed copy of the daily CQC report.

#### 1.6.3.2 Deficiency Tracking.

The Contractor shall use QCS to track deficiencies. Deficiencies identified by the Contractor will be numerically tracked using QC punch list items. The Contractor shall maintain a current log of its QC punch list items in the QCS database. The Government will log the deficiencies it has identified using its QA punch list items. The Government's QA punch list items will be included in its export file to the Contractor. The Contractor shall regularly update the correction status of both QC and QA punch list items.

#### 1.6.3.3 QC Requirements

Develop and maintain a complete list of QC testing, transferred and installed property, and user training requirements in QCS. Update all data on these QC requirements as work progresses, and promptly provide this information to the Government via QCS.

#### 1.6.3.4 Three-Phase Control Meetings

The Contractor shall maintain scheduled and actual dates and times of preparatory and initial control meetings in QCS.

#### 1.6.3.5 Labor and Equipment Hours

Log labor and equipment exposure hours on a daily basis. This data will be rolled up into a monthly exposure report.

#### 1.6.3.6 Accident/Safety Tracking.

The Government will issue safety comments, directions, or guidance whenever safety deficiencies are observed. The Government's safety comments will be included in its export file to the Contractor. The Contractor shall regularly update the correction status of the safety comments. In addition, the Contractor shall utilize QCS to advise the Government of any accidents occurring on the jobsite. This brief supplemental entry is not to be considered as a substitute for completion of mandatory reports, e.g., ENG Form 3394 and OSHA Form 300.

#### 1.6.3.7 Features of Work

The Contractor shall include a complete list of the features of work in the QCS database. A feature of work may be associated with multiple pay activities. However, each pay activity (see subparagraph "Pay Activity Data" of paragraph "Finances") will only be linked to a single feature of work.

#### 1.6.3.8 Hazard Analysis

Use QCS to develop a hazard analysis for each feature of work included in the CQC Plan. The hazard analysis shall address any hazards, or potential hazards, that may be associated with the work.

#### 1.6.4 Submittal Management

The Government will provide the initial submittal register in electronic format. Thereafter, the Contractor shall maintain a complete list of all submittals, including completion of all data columns. Dates on which submittals are received and returned by the Government will be included in its export file to the Contractor. The Contractor shall use QCS to track and transmit all submittals. ENG Form 4025, submittal transmittal form, and the submittal register update shall be produced using QCS. RMS will be used to update, store and exchange submittal registers and transmittals, but will not be used for storage of actual submittals.

#### 1.6.5 Schedule

The Contractor shall develop a construction schedule consisting of pay activities, in accordance with Contract Clause "Schedules for Construction Contracts", and Section 01321, CONSTRUCTION PROGRESS DOCUMENTATION. This schedule shall be input and maintained in the QCS database either manually, or by using the Standard Data Exchange Format (SDEF) if applicable (also see Section 01321, CONSTRUCTION PROGRESS DOCUMENTATION. The updated schedule data shall be included with each pay request submitted by the Contractor.

#### 1.6.6 Import/Export of Data

QCS includes the ability to export Contractor data to the Government and to import submittal register and other Government-provided data, and schedule data using SDEF.

### 1.7 IMPLEMENTATION

Contractor use of QCS as described in the preceding paragraphs is mandatory. The Contractor shall ensure that sufficient resources are available to maintain its QCS database, and to provide the Government with regular database updates. QCS shall be an integral part of the Contractor's management of quality control.

### 1.8 DATA SUBMISSION VIA CD-ROM

The Government-preferred method for Contractor's submission of QCS data is by using the Government's SFTP repository built into QCS export function. Other data should be submitted using E-mail with file attachment(s). For locations where this is not feasible, the Contracting Officer may permit use of CD-ROM for data transfer.

Export data onto CDs using the QCS built-in export function. If used, submit CD-ROMs in accordance with the following:

#### 1.8.1 File Medium

The Contractor shall submit required data on CD-ROM. They shall conform to industry standards used in the United States. All data shall be provided in English.

#### 1.8.2 CD-ROM Labels

The Contractor shall affix a permanent exterior label to each CD-ROM submitted. The label shall indicate in English, the QCS file name, full contract number, contract name, project location, data date, name and telephone number of person responsible for the data.

#### 1.8.3 File Names

The files will be automatically named by the QCS software. The naming convention established by the QCS software shall not be altered in any way by the Contractor.

### 1.9 MONTHLY COORDINATION MEETING

The Contractor shall update the QCS database each workday. At least monthly, the Contractor shall generate and submit an export file to the Government with schedule update and progress payment request. As required in Contract Clause "Payments", at least one week prior to submittal, the Contractor shall meet with the Government representative to review the planned progress payment data submission for errors and omissions. The Contractor shall make all required corrections prior to Government acceptance of the export file and progress payment request. Payment requests accompanied by incomplete or incorrect data submittals will be returned. The Government will not process progress payments until an acceptable QCS export file is received.

### 1.10 NOTIFICATION OF NONCOMPLIANCE

The Contracting Officer will notify the Contractor of any detected noncompliance with the requirements of this specification. The Contractor shall take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the work site, shall be deemed sufficient for the purpose of notification.

## PART 2 PRODUCTS

Not used.

## PART 3 EXECUTION

Not used.

-- End of Section --

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## SECTION 01321 - CONSTRUCTION PROGRESS DOCUMENTATION

### PART 1 GENERAL

#### 1.0 MEASUREMENT AND PAYMENT

No separate measurement and payment will be made for scheduling of all procurement and construction activities, and all costs associated therewith shall be included in the applicable unit prices or lump-sum prices contained in the Bidding Schedule.

#### 1.1 GENERAL

The scheduling of all procurement and construction activities shall be the responsibility of the Contractor. All construction increments will be interrelated on a single schedule that represents the entire project duration from the NTP to the Contract Completion Date.

#### 1.2 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

##### U.S. ARMY CORPS OF ENGINEERS (USACE)

ER 1-1-11 (1995) Progress, Schedules, and Network Analysis Systems

#### 1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. Submit the following in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Construction Schedule; G,RO

#### 1.4 CONSTRUCTION SCHEDULE

Submit within 10 calendar days after NTP for approval a construction schedule in the form of a Critical Path Method (CPM), Network Analysis Schedule (NAS) in

accordance with the terms in Contract Clause, SCHEDULES FOR CONSTRUCTION CONTRACTS, except as modified in this contract.

#### 1.5 NETWORK ANALYSIS SCHEDULE (NAS)

The schedule shall be the basis for determining progress and therefore the amount of each progress payment. No progress payments will be made without the submittal of an acceptable schedule or update.

The Contractor shall use the critical path method (CPM) to schedule and control construction activities. The network may utilize either the I-J or Precedent Diagramming method and shall show the order and interdependence of activities in which the work is to be performed. The schedule shall be developed to an appropriate level of detail. Reasonable activity durations are those that allow the progress of ongoing activities to be accurately determined between update periods. Generally, less than 2 percent of all non-procurement shall have duration greater than 21 calendar days. The work activity durations must consider all adverse weather impacts that are anticipated during the period the activity is scheduled to be in progress. The schedule shall identify as a minimum:

- a. Activity description;
- b. Activity duration;
- c. Activity cost;
- d. Responsibility code assigning activities to the Prime Contractor, Subcontractor or Government agency responsible for the activity;
- e. Critical Path;
- f. Major submittals and submittal processing time; and
- g. Any material with a lead-time of greater than 30 calendar days.

##### 1.5.1 CPM Submittals and Procedures

Submit the original and five copies of all network diagrams, analysis, reports and updates and a copy of the backed-up native files (e.g. .prx or .stx) for the schedule submittal. The project schedule shall also be posted as an Adobe PDF file format with no relationship lines displayed in the graphic.

##### 1.5.2 Transfer of Schedule into RMS/QCS

The Contractor shall load the schedule data into the Construction Contractor module of Resident Management System (RMS), as described in Specification Section 01312 QUALITY CONTROL SYSTEM (QCS) prior to the database being transferred to the

Government. This data transfer may be accomplished electronically by using a NAS scheduling software system that meets the activity coding structure defined in the Standard Data Exchange Format (SDEF) in ER 1-1-11. If the Contractor selects a NAS scheduling software system that is not Standard Data Exchange Format (SDEF) compliant, then the Contractor shall perform this data transfer from the schedule into the QUALITY CONTROL SYSTEM (QCS) manually.

This is considered to be additional supporting data in a form and detail required by the Contracting Officer pursuant to the Contract Clause, PAYMENTS UNDER FIXED-PRICE CONSTRUCTION CONTRACTS. The receipt of a proper payment request pursuant to the Contract Clause, PROMPT PAYMENT FOR CONSTRUCTION CONTRACTS, is contingent upon the Government receiving both acceptable and approvable hard copies and electronic export from QCS of the application for progress payment.

## 1.6 UPDATED SCHEDULES

Update the construction schedule at monthly intervals or more frequently when revisions are required to the schedule. The network analysis system shall be kept current, with changes made to reflect the actual progress status of the construction.

### 1.6.1 Periodic Schedule Update Meetings

At monthly intervals, the Contractor (consisting as a minimum, the Project Manager) and Government representatives will meet to jointly update the project schedule. The purpose of the meeting is a working interactive exchange to determine earned value amounts for each activity, allow all parties to evaluate project status as of the data date, provide a complete and accurate update of the procurement and construction progress, review the Contractor's proposed out of sequence corrections, determine causes for delay, correct logic, maintain schedule accuracy, create a historical record of the project and establish prediction of completion dates based upon current status. The Contractor is responsible to gather all supporting documentation, present the update data for the schedule and record the meeting minutes in the narrative report. All progress payment earned value amounts will be derived from and tied to the cost-loaded schedule activities. During this meeting, the Contractor shall describe, on an activity-by-activity basis, all proposed revisions and adjustments to the project schedule required to reflect the current status of the project. The Contracting Officer will approve activity progress, proposed revisions, and adjustments as appropriate. The meeting to update the schedule and the post-meeting submission of an error free, acceptable updated schedule and narrative report to the Government is a condition precedent to the submission of an invoice for progress payment.

### 1.6.2 Narrative Report

The Contractor shall provide a comprehensive and meaningful narrative report with each update of the project schedule. The narrative report is important to indicate that

the Contractor has reviewed and evaluated the updated schedule, has developed a plan to recover the original schedule (if applicable), and is planning the work activities and resources to accomplish the remaining scheduled work. This report shall be provided as the basis of the Contractor's progress payment request. The Narrative Report shall include: a description of activities along the critical paths and the near critical paths (total float 1 - 14 days), a description of current and anticipated problem areas or delaying factors and their impact, and an explanation of corrective actions taken or required to be taken. The narrative report is expected to relay to the Government, the Contractor's thorough analysis of the schedule output and its plans to compensate for any problems, either current or potential, which are revealed through that analysis. The evaluation shall include a review of actual activity durations and crew loadings compared to the scheduled durations and crew loadings for critical and near critical activities. If the Contractor believes that any Government action or inaction has, or potentially will impact its progress, it shall include the specific notice of the fact in this report. This information should include the activity number(s) of the impacted work with the nature and duration of the impact. The narrative report shall also address all modifications and weather activities that were status for the progress and their impact on the contract completion and total float.

## PART 2 PRODUCTS

Not used.

## PART 3 EXECUTION

Not used.

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## SECTION 01572 – TRUCK WASH-DOWN RACK

### PART 1 GENERAL

#### 1.1 SCOPE

The work specified in this section consists of the Contractor refurbishing, operating and maintaining an existing high water pressure truck wash-down rack for the contract duration and it's restoration at the end of the contract duration, as shown on the drawings. Provide all hose and after-valve fittings, including hose bids. Refurbishing the truck wash down rack includes removing, and setting new timber mats, as shown on the drawings. Contractor is encouraged to visit site to determine all fittings necessary. The Contractor shall also construct, operate and maintain a temporary truck washdown rack located at each borrow pit location prior to entering public streets and highways.

#### 1.2 RESERVED

#### 1.3 MEASUREMENT AND PAYMENT

##### 1.3.1 Permanent Truck Washdown Rack

No measurement will be made for the Contractor's refurbishing, operating and maintaining of the existing permanent high water pressure truck wash-down rack. Payment for refurbishing, maintenance and operation of a high water pressure truck wash-down rack and restoring upon completion of hauling operations will be made at the contract price each for "Permanent Truck Washdown Rack". Price and payment shall constitute full compensation for all plant, labor, equipment, mechanical street sweeper and material to refurbish, maintain and restore upon completion of hauling operations, the existing truck wash down rack as specified herein and as shown on drawings.

##### 1.3.2 Temporary Truck Washdown Rack(s)

Measurement will be made for each temporary truck wash-down rack designed, constructed, maintained and removed by the Contractor. Payment for the temporary truck wash-down rack, including its maintenance and removal, will be made at the contract price for each "Temporary Truck Washdown Rack". Price and payment shall constitute full compensation for furnishing the design, and all plant, labor, equipment, mechanical street sweeper and material to complete the work as specified herein.

### PART 2 PRODUCTS (Not Applicable)

## PART 3 EXECUTION

### 3.1 PERMANENT TRUCK WASH-DOWN RACK

#### 3.1.1 General

The Contractor's truck wash-down rack is located at station 10+96 on the East Haul/Access Road, as shown on the drawings, near the point of egress from the construction site onto Nicole Blvd within the Drake Stockpile Yard owned by the West Jefferson Levee District (WJLD). The Contractor is responsible for thorough wash down of all their vehicles to eliminate carrying mud, tracking, spillage and/or other surface pollution from equipment and operations from entering public streets. West Jefferson Levee District will maintain a separate wash down rack for other vehicles using the stockpile yard. At times when no other contractor is at the Yard, the Contractor is responsible for street cleaning.

#### 3.1.2 Timber Mats

The Contractor shall remove the existing timber mats and install new, 4-foot by 20-foot and 4-foot by 12-foot, timber mats with each individual timber measuring 12-inch x12-inch and forming a 20 foot by 12 foot pad. The timber mats pad shall be supported by underlying crossing mats, 4-foot by 12-foot, forming a bridging effect, as shown on the drawings. Set the top mat elevation 8-12 inches above the adjacent road and slope adequately to drain to east (towards the wood line). Use silt fence to catch all sediment before entering woodline ditch and dispose sediment in the Drake Stock Yard Facility. Ramp up to top timber mat using compacted clay, at a slope practical for the size and types of equipment used. The Contractor shall contact WJLD for the disposal of the old timber matting.

#### 3.1.3 Drainage

The Contractor shall slope area to promote positive drainage of all truck wash-down rack waste water using existing drainage at the site. Sediment removed shall be disposed of at the Drake Stockpile Yard.

#### 3.1.4 Refurbish

Upon completion of the hauling operations, the Contractor shall refurbish the truck wash-down rack timbers by resetting their elevation and sloped to drain for permanent future use by WJLD (see paragraph 3.1.2).

### 3.2 TEMPORARY TRUCK WASH-DOWN RACK

The Contractor shall design, submit to the Contracting Officer for approval, and provide a hard-surfaced truck wash-down rack to be located at a point of egress from the borrow pit location prior to entering any public street or highway for each

Contractor furnished borrow pit operation during hauling operations to eliminate mud and debris transported onto public roads and highways. All trucks utilized for hauling shall be pressure washed on the wash-down rack prior to departing the construction site. The truck wash-down rack shall be sized and located within the rights-of-way for the Contractor furnished borrow pit operation per the Contractor's proposed equipment and construction site layout.

1. The hard surfaced truck wash-down rack shall consist of a Contractor designed steel grated structure, wooden timber crane mats, or an equivalent method.
2. Surfacing meeting the requirements of Section 02731.
3. All truck wash-down rack waste water and sediment shall be intercepted before draining offsite. The water shall be drained into the nearest drainage facility and the sediment removed and disposed of in the used portions of the borrow pit or as the Contractor has agreed upon with the borrow pit landowner or agent for the landowner.
4. Additionally, the Contractor shall station a mechanical street sweeper on site and shall immediately clean the public streets and highways at each Contractor furnished borrow pit operation of any debris falling off the washed trucks.
5. Upon completion of the hauling operation, the Contractor shall remove the truck wash-down rack and all appurtenances from the construction site.
6. The area where the truck wash-down rack was located shall be restored to the condition or better than prior to construction activities. All aggregate placed between the wash-down rack and the roadway shall be removed.

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## SECTION 02332 - EMBANKMENT

### PART 1 GENERAL

#### 1.1 SCOPE

The work covered by this section consists of furnishing all plant, labor, equipment, tests and materials, except as otherwise specified in Section 02318, "EXCAVATION", and performing all operations in connection with foundation preparation and construction of embankments and berms, enlargement of existing levee for the advanced levee section and the final levee section, filling the existing drainage canal, constructing the ramp (at approx. sta. 514+00) and ramps and turnarounds (at approx. stas. 414+00 and 476+00), levee berm roads, resetting and maintaining the permanent timber bridge mat at sta. 476+04, and other incidental earthwork as may be necessary to complete the embankments, as shown on the drawings, and as hereinafter specified. The Contractor Provided Haul Road (CPHR) is defined herein..

#### 1.2 REFERENCES

The following publications of the issues listed below, but referred to before and thereafter by the basic designation only, form a part of this specification to the extent indicated by the references thereto:

#### AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM) STANDARD

ASTM D 422	(1963) Standard Test Method for Particle – Size Analysis of Soils
ASTM D 698	(2000a) Laboratory Compaction Characteristics of Soil Using Standard Efforts (12,400ft-lbs/ft <sup>3</sup> (6000KN-m/m <sup>3</sup> ))
ASTM D 1556	(2000) Density and Unit Weight of Soil in Place by the Sand-Cone Method
ASTM D 2216	(2005) Laboratory Determination of Water, (Moisture) Content of Soil and Rock by Mass
ASTM D 2487	(2006) Classification of Soils for Engineering Purposes (Unified Soil Classification System)
ASTM D 2922	(2005) Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)

ASTM D 2974	(2000) Moisture, Ash, and Organic Matter of Peat and Other Organic Soils
ASTM D 4318	(2005) Liquid Limit, Plastic Limit, and Plasticity Index of Soils
ASTM E 329	(2006) Agencies Engaged in Construction Inspection and/or testing
ASTM D 4643	(2000) Determination of Water (Moisture) Content of Soil by Microwave Method

#### U.S. ARMY CORPS OF ENGINEERS ENGINEER MANUAL.

EM 385-1-1	(2003) U. S. Army Corps of Engineers Safety and Health Requirements Manual
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### 1.3 MEASUREMENT

#### 1.3.1 Embankment and Berms

Unless otherwise specified, compacted fill, uncompacted fill and required fill and backfill materials of any description specified in this section including fill placed by reason of soft material in the foundation being forced outward from the section, will be measured for payment by the cubic yard, and quantities will be determined by the average end area method. The basis for the measurement will be cross sections of the areas to be filled taken prior to clearing, grubbing, and vegetation removal operations and the theoretical design sections of the completed levee constructed within the specified tolerance. Embankment not constructed to construction grade and section including allowable tolerance as indicated on the Contractor's compliance survey will not be accepted.

(1) Volumes occupied by drainage structures will not be included in measurement of embankment for payment.

(2) The basis for measurement of fill placed by reason of soft material in the foundation being forced outward from the section will be a survey of the area taken prior to the filling operations and a second survey of the same area after completion of the filling operations.

#### 1.3.2 Settlement

Measurement of additional fill material placed in each settlement measurement range shown on the drawings by reason of foundation settlement, will be based on measurements on the respective settlement gage installed as specified in paragraph 3.8.1 and will be determined as follows:

(1) The settlement measured at each settlement gage will be considered to apply to the foundation area throughout the length of the settlement ranges specified herein where the gage is located. In the event that embankment over a settlement gage is constructed to a height in excess of the specified gross design construction lines plus the tolerance permitted under paragraph 3.7. No measurement of settlement will be made and will result in forfeiture of any payment that may be due the Contractor for the settlement range applying to that settlement gage. Further, in instances where settlement plates have been set and cannot be found after completion of the embankment, no measurement for settlement will be made, and any payment which may be due the Contractor for the settlement range applicable to that settlement gage will be forfeited.

(2) The foundation settlement under the embankment at each transverse cross section within a settlement range will be considered to vary uniformly between break points in the cross section. At each breakpoint, the settlement allowance will be based upon the proportion that the specified fill height at the break point bears to the specified fill height at the settlement gage, in accordance with the following formula:  $S = h \times s_m / h_m$ , where S = settlement to be computed at a break point; h = specified gross fill height at S;  $s_m$  = measured or adjusted settlement gage;  $h_m$  = specified gross fill height above settlement gage. Except as provided above and in paragraph 3.8.2, no measurement for payment for additional fill materials placed by reason of foundation settlement will be made. The foundation settlement under the levee side slopes at each transverse cross section within a settlement measurement range will be considered to vary uniformly from zero settlement at the levee toes to a maximum settlement, equal to the amount of settlement measured on the respective settlement gage, at points under the tops of the slopes. Except as provided above and in paragraph 3.8.2, no measurement for payment for additional materials placed by reason of foundation settlement will be made.

(3) The Contractor will not be compensated for foundation settlement caused by moisture control operations performed on the existing berms. All initial settlement gage readings are required to be taken prior to moisture control operations on the existing berms. In instances where the Contractor performs moisture control after initial gage reading were taken, the Contractor must perform settlement gage readings prior to commencing moisture control operations in the area to receive compensation for settlement in that area and if no measurement is taken for settlement any payment which may be due the Contractor for the settlement range applicable to that settlement gage will be forfeited. The Contractor may seek compensation for settlement after all moisture control operations have terminated and new settlement gage readings are performed in the area.

### 1.3.3 Permanent Timber Bridge Mats

No measurement will be made for resetting and the maintenance of the existing permanent timber bridge mats.

### 1.3.4 Establishment of Turf

The Contracting Officer will withhold 5 percent payment for embankment pending the satisfactory results of fertilizing and seeding operations as specified in Section 02922

## 1.4 PAYMENT

### 1.4.1 Embankment and Berms

Payment for all compacted and uncompacted material placed as required in embankments, berms, ramps and east access/haul roads, levee berm roads, fill and backfill, and including additional material placed by reason of foundation settlement and by reason of soft material in the foundation being forced outward from the section during construction, whether furnished from the available Government-furnished borrow pits or the Contractor furnished borrow pit(s), will be made at the applicable contract unit price per cubic yard for "Embankment, Compacted Fill" or "Embankment, Uncompacted Fill". Price and payment shall constitute full compensation for furnishing all plant, labor, employ of professional engineering services, equipment, non-earthen material, earthen material from Contractor furnished borrow and excluding material from Government-furnished borrow, and performing all operations necessary for excavation, material processing for moisture control and blending, all testing, hauling, foundation preparation, the removal and disposal of soft soils, i.e., mudwave materials, placing and compacting the material and other incidental work required to complete the embankment or fill.

### 1.4.2 Settlement Gages

The cost of furnishing, installing, and maintaining during embankment construction the settlement gages specified herein, if used, including measurements required to be made by the Contractor shall be at the expense of the Contractor. No separate payment will be made for compaction of fills around and over the settlement gages or for interference with the Contractor's operations resulting from the settlement gage installations.

### 1.4.3 Forfeiture of Payment for Settlement of Foundation

Failure to utilize settlement gages in strict accordance with the specifications and drawings will result in total forfeiture of any payment that may otherwise be due the Contractor for settlement of the foundation. In each case of 1) failure to recover any settlement gage, 2) construction of embankment over a settlement gage in excess of specified construction lines plus the tolerance permitted under paragraph 3.7) failure to comply with the 72 hour requirement in paragraph 3.8.1, for determining gage

elevations, payment will be totally forfeited for the reach attributable to each gage so affected.

#### 1.4.4 Permanent Timber Bridge Mats

Payment for resetting and maintaining the permanent timber bridge mats(existing) required at B/L sta. 476+04 (crossing over 1-24" Natural Gas Pipeline owned by Chevron Pipeline Co.) shall be paid for at the contract lump sum price for "Timber Bridge Mat at B/L Sta. 476+04".

### 1.5 QUALITY CONTROL AND QUALITY ASSURANCE

#### 1.5.1 Quality Control

##### 1.5.1.1 General

The Contractor shall establish and maintain quality control for embankment construction operations to assure compliance with contract requirements, and maintain records of its quality control for all construction operations including but not limited to the following:

- (1) Equipment. Type, size, and suitability for construction of the prescribed work.
- (2) Foundation Preparation. Breaking surface in advance of embankment \*(and berm) construction, and during fill placement when necessary, drainage of foundation and partially completed fill.
- (3) Materials. Applicable tests, location of material testing sites.
- (4) Construction. Layout, maintaining existing drainage, moisture control, thickness of layers, spreading and compacting.
- (5) Grade and Cross Section. Crown width, crown slope, side slopes, and grades.
- (6) Roads and Ramps. Location of temporary roads to fields or buildings, location and placement of fills for ramps in accordance with specified dimensions and grades.
- (7) Grade Tolerances. Check fills to determine if placement conforms to prescribed grade and cross section.
- (8) Settlement of Foundation. Location of settlement gages established or measurements taken to determine settlement, location of sudden failures.

(9) Slides. Location and limits; methods and equipment used where remedial work has been directed.

(10) Control Testing.

The Contractor shall perform all control testing such as soil classification, moisture content, control compaction curves, organic content, and in-place density. The results all tests shall be reported to the Contracting Officer's representative within 24 hours of sampling, except for the organic test results, which shall be reported within 48 hours of sampling. For information, the Contractor shall submit the results of the in-place density test, moisture content test, and organic content test to the Contracting Officer's representative so they can be faxed to Chief of Geotechnical Branch @ 504-862-2987. Testing shall be performed by a Government approved testing agency, or organization including on-site testing labs operated by QC personnel. Criteria used for obtaining Government approval shall be in accordance with ASTM E 329. Microwave testing for moisture control in accordance with ASTM D 4643 is allowed in the contractor's field laboratory. No additional payment will be made for control testing required in this paragraph. All costs in connection therewith shall be included in the contract unit price for "Embankment, Compacted Fill" and "Embankment, Uncompacted Fill". Documentation of sampling locations for the following tests shall be clearly defined by levee station and offset and also by lift number or elevation. As a minimum, the following tests are required:

1. Soil Classification Tests. Determination of soil classification shall be in accordance with ASTM D 2487. Atterberg Limits Test required for soil classification shall be performed in accordance with ASTM D 4318. One Atterberg test shall be obtained from the sample material used for each control compaction curve and one shall be obtained from the sample material used for each in-place density test. If the Nuclear Method is used, the material to be tested shall come from within a radius of 12 inches of the center of the in-place density test site. The soil classification obtained from in-place density tests will serve as the basis for determining the applicable control compaction curves. In addition, classification tests shall be performed on uncompacted fill at a minimum frequency of one test per 1,000 linear feet per lift placed in the levee section.

2. Control Compaction Curves - Compacted Fills. Control compaction curves shall be established in accordance with ASTM D 698 (Standard Proctor Compaction Tests). Two control compaction curves will be required for each type of material from each source. Where construction operations result in blending of several types of

material prior to or during fill placement within the embankment design sections, two control compaction curves will be required for each resulting blend of material and will be utilized in lieu of those required for the "unblended materials". The average of the two tests shall be the controlling optimum moisture content and maximum dry density.

3. In-Place Density Tests. In-place density tests for compacted fill material shall be made in accordance with ASTM D 2922 (Nuclear Method) or ASTM D 1556 (Sand Cone Method), and shall be made at a minimum frequency of one density test per 1500 cubic yards of compacted fill placed in the levee per lift, but not less than one density test per 500 feet per lift. At least one test shall be performed in any shift that compacted fill is placed. A lift on any one side of the existing embankment will be considered one lift. The location of the test shall be representative of the area being tested or as directed by the Contracting Officer. For each in-place density test, the Contractor shall determine the percentage of ASTM D 698 maximum dry density and the deviation from optimum water content in percentage points (plus or minus), using the control compaction curves for the same type of material. The appropriate control compaction curve shall be selected by using visual soil classification and soil classification tests.

If the nuclear method is selected for field density testing, the sand-cone method shall be used to confirm the accuracy of the nuclear method. This can be accomplished by performing an initial comparison test of the two methods at the start of construction. If the nuclear method wet density is within 3 percent of the sand cone method, no correction of the nuclear method wet density will be required and the testing may continue with the nuclear method. The nuclear method wet density shall be verified throughout the project at a rate of one sand-cone test for every ten nuclear tests thereafter. If the variance at any time exceeds 3 percent, a correction factor will be required to be determined prior to any further testing. For comparison purposes, the nuclear and sand-cone wet densities should represent the same layer thickness within the testing area selected. When a field density result is in doubt, the sand-cone density test shall be considered for acceptance.

The correction factor shall be determined by conducting ten comparison tests (five D-2922 & five D-1556) and calculating the average difference (correction) for each soil type encountered. The developed correction shall be used for adjusting the nuclear wet density readings.

4. Moisture Content Tests. Moisture content tests at each density test location shall be taken to assure compliance with requirements for fill placement within the design sections as specified in paragraph 1.7.3. Determination of moisture content shall be performed in accordance with ASTM D 2216 or ASTM D 4643.

5. In-Place Organic Content Tests. Organic content tests shall be taken at each in-place density test location. In addition, organic content tests shall be performed on uncompacted fill at the same locations as the soil classification tests as specified in paragraph 1.5.1.1(10)1. Determination of organic content shall be in accordance with ASTM D 2974, method C.

6 Additional Test. In addition to the above frequency of tests, additional tests are required as follows:

a. Where the Contracting Officer's Representative has reason to doubt the adequacy of the compaction, organic content or moisture control.

b. Where the Contractor is concentrating fill operations over a relatively small area.

c. When in the opinion of the Contracting Officer, embankment materials change, the Contracting Officer may direct additional testing.

d. Where special compaction procedures/equipment are being used.

e. When areas are found not meeting the specified in-place density, Atterberg Limits, and/or in-place organic content requirements the Contractor shall retest, at no additional costs to the Government, after corrective measures have been applied.

(11) Compliance Surveys. Furnish plotted cross sections at intervals and locations corresponding to the Government's original survey. Upon completion of suitable reaches of embankment, the Contractor shall perform, plot and submit compliance cross section surveys at a maximum of 300-foot intervals and all P.I.'s curve P.C.'s, P.T.'s, levee transitions and breakpoints. All sections shall be taken at locations corresponding to the Government original survey. They shall be plotted by the Contractor on a minimum scale of 1-inch equal to 10 feet horizontally and 1 inch equal to 5 feet vertically with the theoretical design cross section and allowable grade tolerances superimposed thereon. Additionally, the

Contractor shall perform, plot, and submit a levee centerline profile with shots taken at a maximum of 20-foot intervals.

(12) Quantity Surveys. Provide plotted cross sections of all surveys for progress payments at a maximum of 300-foot intervals. Perform, plot and submit partial levee cross sections at a maximum of 300-foot intervals for determining progress payments. Plot on the same scale noted above.

#### 1.5.1.2 Reporting

The original and two (2) copies of these records of inspections and tests, as well as the records of corrective action taken, shall be furnished the Government daily. Format of the report shall be as prescribed in Section 01451, "CONTRACTOR QUALITY CONTROL".

#### 1.5.2 QUALITY ASSURANCE

Government Testing. As a control, the Government will perform assurance and check tests for maximum dry density for all materials in accordance with ASTM D 698. If values for maximum dry density as determined by the Contractor and as determined by the Government do not agree, the Government will determine the values to be used. The Government will also perform check and assurance testing of the other control testing required by the Contractor in paragraph 1.5.1.1(10).

#### 1.6 EQUIPMENT

##### 1.6.1 General

Compaction equipment shall be capable of properly compacting the soil so that no planes of weakness or laminations are formed in the fill. Equipment shall be capable of compacting a layer of soil not less than 12 inches thick to the requirements specified herein and shall be operated at speeds not to exceed 3.5 miles per hour.

##### 1.6.2 Hand Tampers

Hand tamping shall be used in the compaction of fill within three feet of any structure or other drainage feature and near same where vehicular equipment cannot be used. These hand tampers shall be of the power driven, hand operated type.

##### 1.6.3 Miscellaneous Equipment

Scarifiers, disks, spring-tooth or spike-tooth harrows, spreaders, power tampers, hand compactors, garden tillers, vibrators and other equipment shall be suitable for the type of construction required and acceptable to the Contracting Officer. Hand-operated power tampers for use in compacting impervious materials in confined areas, areas not to be disturbed, or against structures shall have a minimum static weight of 100

pounds. All hand-operated power tampers and vibratory compactors must be field checked prior to their use on fill to assure that the required results can be obtained. Such field checks shall be accomplished under the direction and supervision of the Contracting Officer. Any hand-operated equipment found not producing the required results will not be allowed on the fill.

#### 1.6.4 Sprinkling Equipment

Sprinkling equipment shall be designed to apply water uniformly and in controlled quantities to variable widths of surface.

### 1.7 EMBANKMENT AND BERM MATERIALS

#### 1.7.1 General

The embankment and berms shall be constructed of earth obtained from the borrow areas (Government-furnished and Mandatory Contractor-furnished), and other required excavations as prescribed in Section 02318, "EXCAVATION" and to the extent shown on the drawings.

#### 1.7.2 Materials

The embankment shall be constructed of earth materials naturally occurring or Contractor blended. Materials that are classified in accordance with ASTM D2487 as CL or CH are suitable for use as embankment fill. Materials classified as ML are suitable if blended to produce a material that classifies as CH or CL according to ASTM D 2487. All fill materials shall be free from masses of organic matter, sticks, branches, roots, and other debris including hazardous and regulated solid wastes. As earth from the designated excavation areas may contain excessive amounts of wood, isolated pieces of wood will not be considered objectionable in the embankment provided their length does not exceed 1 foot, their cross-sectional area is less than 4 square inches, and they are distributed throughout the fill. Not more than 1 percent (by volume) of objectionable material shall be contained in the earth material placed in each cubic yard of the levee section. Pockets and/or zones of wood shall not be placed in the embankment. The Contractor shall notify the Contracting Officer whenever the Plasticity Index of the material is 15 or less. Materials placed in the section shall be at or above the Plasticity Index of 10. Materials placed in the section shall be at or below organic content of 9 percent by weight, as determined by ASTM D 2974, Method C.

#### 1.7.3 Moisture Control

##### 1.7.3.1 Moisture Control-Compacted Fill

The Contractor shall control the moisture content of the embankment material. The optimum moisture content shall be determined in accordance with paragraph

1.5.1.1(10). The Contractor shall perform the necessary work in moisture control to bring the borrow material within the moisture content range specified in paragraph 1.7.4. Borrow material is considered too wet to be placed directly upon the levee compacted fill footprint if it has a moisture content greater than 10 percentage points above the optimum moisture content resulting from the Standard Proctor Compaction Test ASTM D 698. Borrow material is considered too dry to be placed directly upon the levee compacted fill footprint, if it has a moisture content more than 10 percentage points below the optimum moisture content resulting from the Standard Proctor Compaction Test ASTM D 698. If the borrow material is too wet, it shall either be stockpiled and allowed to drain and/or the wet material shall be processed by disking and harrowing, if necessary, until the moisture content is reduced sufficiently. When it is discovered that wet fill has been placed over existing levee or newly constructed compacted fill footprint, the incident layer and previous layer will be tested in a minimum of two locations for density and moisture compliance. If the borrow material is too dry, it shall be prewet in the source area. If the top or contact surfaces of a partially filled section becomes too dry to permit suitable bond between these surfaces and the additional fill to be placed thereon, the Contractor shall loosen the dried materials by scarifying, disking, or other approved methods, and shall recompact this layer in accordance with the applicable requirements of paragraph 1.7.4. If the top or contact surfaces of a partially filled section becomes too wet to permit suitable bond between these surfaces and the additional backfill to be placed thereon, the wet material shall be scarified and permitted to dry, assisted by disking or harrowing. The material shall be recompact in accordance with the applicable requirements of paragraph 1.7.4. No additional payment will be made for any moisture control required in this paragraph.

#### 1.7.3.2 Moisture Control-Uncompacted Fill

There are no moisture control requirements for uncompacted fill. Uncompacted fill shall be placed at its natural water content

#### 1.7.4 Compaction

The first and each successive layer of compacted fill material shall be compacted to at least 90 percent of maximum dry density as determined by ASTM D 698 (Standard Proctor Compaction Test) at a moisture content within the limits of plus 5 to minus 3 percentage points of optimum moisture content determined from the Standard Proctor Compaction Test ASTM D 698. For the first layer above the geotextile, a tractor having a ground pressure no greater than 4.7 plus or minus 0.2 psi shall be used to spread and then compact the layer.

#### 1.7.5 Dressing

The entire embankment and berm, including topsoil where specified, shall be brought to not less than the prescribed design cross section, within allowable tolerance, at all

points. Unreasonable roughness of the surface shall be dressed out to permit fertilizing, seeding and mulching operations.

## PART 2 PRODUCTS (Not Applicable)

## PART 3 EXECUTION

### 3.1 EMBANKMENT AND BERM FOUNDATION PREPARATION

#### 3.1.1 Foundation Preparation

After clearing and grubbing and any required excavation of the embankment and berm foundation and other similar cavities and depressions shall be broken down, where so directed, to flatten out the slopes. The entire earth surface on or against which fill is to be placed, except areas covered with water and not drained as specified in paragraph 3.1.2, shall be thoroughly broken to a depth of 6 inches. Areas on which geotextile is to be placed shall be dressed, to provide a smooth surface within the allowable tolerance, and left unbroken. If for any cause, this broken surface becomes compacted in such a manner that, in the opinion of the Contracting Officer, a plane of seepage or weakness might be induced, it shall again be adequately scarified before depositing material thereon. For levee enlargement work, both the natural surface of the ground and the surface of the existing levee to be occupied by the new work shall be prepared as specified above. 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 but not greater than 500 feet in advance of the embankment and berm construction.

#### 3.1.2 Foundation Preparation Existing Drainage Canal

The foundation receiving fill within the existing drainage canal or abandoned drainage canal shall not be drained. See fill requirements in 3.2.2.1.

#### 3.1.3 Frozen Ground

No fill shall be placed upon frozen ground.

### 3.2 EMBANKMENT AND BERM CONSTRUCTION

#### 3.2.1 Compacted Fill

The location and extent of the compacted fill is shown on the drawings. Compacted fill shall not be placed in water. The materials for compacted fill shall be placed or spread in layers, the first or bottom layer and the last two layers not more than 6 inches in thickness and all layers between the first and the last two layers not more than 12 inches in thickness prior to compaction except the first layer on top of the geotextile shall be 15 inches thick, plus or minus 3 inches, as specified in Section

02078, "GEOTEXTILE" (for details see drawings). Layers shall be started full out to the slope stakes and shall be carried substantially horizontal and parallel to the levee centerline with sufficient crown or slope to provide satisfactory drainage during construction. Areas on which geotextile is to be placed shall be dressed out and leveled to the extent there are no abrupt changes in grade. When placing fill on the geotextile, mechanical equipment shall not be allowed to come in contact with the geotextile in any way. When the surface of any compacted layer is too smooth to bond properly with the succeeding layer, it shall be adequately scarified before the next layer is placed thereon. The elevation of the levee embankment shall not exceed the elevation of the berm embankment(s) by more than five (5) feet (maximum).

### 3.2.2 Uncompacted Fill

The location and extent of the uncompacted fill is shown on the drawings. Uncompacted fill shall be placed in approximately horizontal layers not exceeding 3 feet in thickness. The layers shall be uniformly spread, distributed, and otherwise manipulated during placement to such an extent that individual loads of material deposited on the fill will not remain intact, and large, open voids in the fill will be eliminated. Layers shall be started full out to the slope stakes, and shall be carried in lifts approximately horizontal and parallel to the centerline with sufficient crown or slope to provide satisfactory drainage during construction. Lifts shall be placed in a manner that prevents shrinkage cracks and open voids from developing in previously placed lifts. Where material must be placed in water, it shall be placed therein until it reaches an elevation 1.0 foot above the water surface, or until a stable fill surface is obtained before layer construction will be required. The material deposited under water shall be placed in such a manner as to ensure that any soft material will be forced progressively outward from the section and not be trapped within the base of the embankment.

#### 3.2.2.1 Fill In Abandoned Drainage Canal and Existing Drainage Canal

Uncompacted fill placed in the abandoned drainage canal (west of the Chevron P/L) and the existing drainage canal (east of the Chevron P/L ) shall be placed in order to minimize the amount of soft material trapped beneath the uncompacted fill and to minimize the "mud wave" forming ahead of the uncompacted fill. Fill within the existing drainage canal shall not commence until the mandatory drainage canal excavation is completed and any fill placement does not impede drainage canal function. The uncompacted fill shall be placed to the design grade and section shown on the drawings using mechanical equipment. The uncompacted fill shall be placed in a "bullnose" configuration, as shown on the drawings, in order to minimize the amount of soft material trapped beneath the uncompacted fill and to minimize the "mud wave" forming ahead of the uncompacted fill. The Contractor shall remove all soft soil/mudwave materials from the levee and berm footprint. Contractor may remove and dispose of soft soil/mudwave materials in fully exhausted portions of the borrow pit or spread evenly and sufficiently to slope to drain between the protected

side levee berm toe and the mandatory drainage canal/borrow pit. The materials shall be spread not to exceed a height of 4' and be no closer than 40 feet to the cut of the mandatory drainage canal or borrow pit. All fill operations within these abandoned or no longer functioning (existing) drainage canals shall be performed without lowering water levels or unwatering canals in accordance with 02318-3.1.2.3.

#### 3.2.2.2 Filling Existing Excavations in Vicinity of Levee

Uncompacted fill is required to fill all previous excavations not associated with local surface drainage from between the protected side levee berm toe to a distance of 445 feet from the baseline, as shown on the drawings. All fill placed shall be sloped to drain.

#### 3.2.3 Construction Phases

Sequence of all fill operations are shown on the drawings. Contractor shall complete the advanced levee embankment section as described in the Section 01100, General Provision entitled "Special Work Requirements".

#### 3.2.4 Permanent Timber Bridge Mats

The Contractor shall adjust and maintain the existing permanent timber bridge mats, at the pipeline crossing located at approximate baseline station 476+04, for the contract duration. The Contractor shall periodically adjust the timber bridge mats and underlying crossing mats to maintain bridging effect with clearances, as shown on the drawings. Ramp-up to top timber mat using compacted clay, at a slope practical for the size and types of equipment used. The mats are currently accommodating one lane of traffic.

#### 3.2.5 Compliance Surveys and Fertilizing and Seeding

Within 10 days of performing the compliance survey for any reach of completed levee section the Contractor shall commence the fertilizing and seeding operations for the completed section of levee.

### 3.3 CROSS SECTIONS AND ZONING OF MATERIALS

#### 3.3.1 Embankment Sections

Unless otherwise specified, the dimensions and slopes shall conform to the applicable cross sections including the allowable tolerance, shown on the drawings.

#### 3.3.2 Zoning of Materials for Levee Construction

In general, the levee section including berms shall be homogeneous; however, where materials of varying permeabilities are encountered in the borrow areas; the more

impervious material shall be placed toward the floodside slope, and the more pervious material toward the protected side slope.

### 3.3.3 Berms

Berms shall be constructed at the locations and to the grade and cross section shown on the drawings.

## 3.4 ROADS AND RAMPS

### 3.4.1 East Access/Haul Road

See Section 02351 for requirements.

### 3.4.2 Ramps and Turnarounds and Levee Berm Road

#### 3.4.2.1 Criteria

The Contractor shall construct the ramps and turnarounds and levee berm road, at the locations and to sections shown on the drawings, after completing all earthwork hauling operations related to the levee embankment work. Ramps and turnarounds and levee berm road shall be constructed in accordance with the requirements specified in Sections 02078, 02731 and herein. Ramps shall be constructed only by adding material to the levee crown and slopes. Ramps shall have a 14-foot crown width, 1V-on-20H crown slope, and 1V-on-3H side slopes, as shown on the drawings.

Geotextile separator, embankment material and surfacing used for construction of the ramps and turnarounds and levee berm roads will be paid for at the contract unit prices as indicated in their respective sections.

#### 3.4.2.2 Modifications

The Contracting Officer reserves the right to modify the dimensions and/or shift the locations of the ramps, to eliminate ramp construction, and/or to order the construction of additional ramps at other locations, all without change in the contract prices, subject to the provisions entitled "*VARIATIONS IN ESTIMATED QUANTITIES*"(FAR 52.211-18) of the Contract Clauses.

### 3.4.3 Speed

Except in an emergency, all vehicles operating within the construction easement area shall not exceed 15 mph

### 3.4.4 Contractor Provided Haul Roads (CPHR)

The CPHR may be constructed on the same alignments as the specified ramps, levee berm roads, and east access haul road in accordance with provisions of Section

01100, General provision entitled SAFETY PROVISIONS, subparagraph 3(g). CPHR are the responsibility of the Contractor and no separate measurement or payment for construction, surfacing and/or maintenance will be made for all CPHR. CPHR are incidental to the construction of this project and cost shall be distributed amongst the existing bid items.

#### 3.4.4.1 Timber Mat Bridging Layout

The permanent timber mat bridge shall be built in accordance with the requirements of paragraph 3.2.4.

#### 3.4.4.2 Drainage Canals and Local Drainage

CPHR shall be constructed so as to avoid impeding drainage of the JPDD canals and the surface drainage. The Contractor shall bear the costs for the installation of culverts required to maintain surface drainage impeded by any roads.

#### 3.5 RESERVED

#### 3.6 DITCHES AND DEPRESSIONS

All sloughs, ditches, or depressions beyond the limits of the levee and/or berm foundation but within the rights-of-way shall be filled with embankment material to the natural surface of the ground or to a height sufficient to ensure drainage after shrinkage of the fill, whichever is higher. The material for the fill shall be placed as specified in paragraph 3.2.2.

#### 3.7 GRADE TOLERANCES

All embankments shall be constructed to the design grade and cross section shown on the drawings. For compacted fill, at all points, a tolerance of 3/10 of 1 foot and for uncompacted fill, at all points, a tolerance of 5/10 of 1 foot above or below the prescribed design grade and cross section shown will be permitted in the final dressing provided that the crown of the levee drains, there are no abrupt humps or depressions in surfaces or bulges in the width of the crown, and the side slopes are uniform. Any partial fill or material temporarily placed within the design section shall not exceed the design grade or design slopes of the embankment by more than 1 foot, and shall have side slopes not steeper than 1V on 3H.

#### 3.8 SETTLEMENT OF FOUNDATION

##### 3.8.1 Additional Fill

Should the Contractor desire payment for placing additional fill due to foundation settlement during construction, it shall furnish and install settlement gages for determination of such settlement. Prior to placing fill material, each gage shall be

installed on the prepared foundation of the location shown on the applicable typical cross section at intervals not to exceed 300 feet, and shall be maintained during construction. Settlement gages at each end of the work shall be placed within 150 ft. of the upper and lower limits of the work. Each gage shall be set on a smooth level surface on undisturbed ground. Leveling of gage beds shall be accomplished by removing the minimum amount of earth necessary to produce an even foundation and in such manner that the density of gage beds will remain at the same density as the undisturbed adjacent ground. Burying the settlement gage below the existing ground surface will not be permitted. Leveling of gage beds by the addition of fill will not be permitted. The type of gage used shall be as shown on the drawings. The Contractor shall determine elevations of the gages prior to placing of fill material, and again within 72 hours after compliance cross sections have been taken over the completed embankment at the sites of the gages to determine settlement of the foundation. The 72-hour requirement is an absolute pre-condition for payment for settlement of the foundation. The initial and final elevation of the gages will be verified by the Contracting Officer's representative at the site. Measurement of additional fill material placed due to settlement of the foundation will be as stated in paragraph 1.3. Installation of and measurement on gages shall be at the option and expense of the Contractor. When the settlement gage is located by boring with rotary drill, the drill hole shall be backfilled with embankment material and tamped throughout. At the Contractor's option, the drill hole may be filled with a neat cement-grout tremied from the bottom of the drill hole to the top of the drill hole.

### 3.8.2 Failures

In clearly established cases of sudden failure of the foundation, (1) where no provision has been made for the measurement of settlement, there will be no measurement made for settlement; (2) where settlement measuring devices have been installed, but the nature of settlement is such as to destroy their utility, the settlement shall be determined from the average elevation of the nearest surviving settlement plates on each side of the failure or, if necessary, the settlement plate nearest the failure. For hydraulic fills, other methods that are mutually agreeable will be used to measure settlement.

### 3.9 SLIDES

Should a slide occur in any part of the embankment during its construction, or after its completion, but prior to its acceptance, the Contractor shall, upon written order of the Contracting Officer, either cut out and remove the slide from the embankment and then rebuild that portion of the embankment, or construct a stability berm of such dimension, and placed in such manner, as the Contracting Officer shall prescribe. In case the slide is caused through fault of the Contractor, the foregoing operations shall be performed at no additional cost to the Government. In case the slide is not the fault of the Contractor, the repair shall be made by an equitable adjustment under the Section 00700 Clause entitled, *Changes (FAR 52.243-4)*. The method of slide correction will be determined by the Contracting Officer.