DEPARTMENT OF THE ARMY
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS
P. O. BOX 60267
NEW ORLEANS, LOUISIANA 70160-0267

REPLY TO
ATTENTION OF

CONTRACTING DIVISION
PROJECTS EAST BRANCH

09 April 2010

SUBJECT: Request for Proposal, HubZone MATOC Task Order for West Bank and Vicinity, New Orleans, Louisiana, Westwego to Harvey Canal, Hurricane and Storm Damage Risk Reduction System (HSDRRS), New Westwego Pumping Station to Orleans Village, Phase 2, First Lift Levee and Floodwalls at Westminster Pumping Station, WBV-14c.2, Jefferson Parish, LA; ED 09-071 (WB14c2-09-H-0026)

HubZone MATOC Contractors:

You are hereby requested to furnish a proposal for the subject project. Attached are the following documents:

- Scope of Work
- Drawings
- Technically Acceptable Criteria
- Wage Rates
- Affirmation Action Goals
- SF-1442

This will be a "Best Value" procurement. All terms and conditions of the basic MATOC contract apply to each individual task order. The estimated cost range for this work is $20,000,000.00 to $25,000,000.00.

The following documents are to be submitted:

- Signed SF-1442 acknowledging any amendments that may be issued
- Completed bidding schedule
- Technical, Past Performance and Cost Proposals addressing all information required
- Bid Bond for 20% of the proposed amount

For a Site Visit, please contact Mr. Glenn Gremillion at 504-862-1873.

Please deliver original proposal to: Corps of Engineers, Attn: Rachel A. Woods, Room 155A, 7400 Leake Avenue, New Orleans, LA 70118. Remember to show your MATOC – HubZone contract number on your proposal. Your proposal is due in this office by 2:00 PM local time, Friday, April 30, 2010. If you have any questions, please contact Ms. Woods at (504) 862-1561, or by email at Rachel.A.Woods@usace.army.mil.

Sincerely,

Paulette S. Phillips
Contracting Officer

SOLICITATION, OFFER, AND AWARD (Construction, Alteration, or Repair)	1. SOLICITATION NO. WB14c2-09-H-0026	2. TYPE OF SOLICITATION ☐ SEALED BID (IFB) ☒ NEGOTIATED (RFP)	3. DATE ISSUED 09 April 2010	PAGE OF PAGES 1 2

IMPORTANT - The "offer" section on the reverse must be fully completed by offeror.

4. CONTRACT NO.	5. REQUISITION/PURCHASE REQUEST NO.	6. PROJECT NO. ED-09-071

7. ISSUED BY CODE W912P8	8. ADDRESS OFFER TO
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS 7400 LEAKE AVE. NEW ORLEANS, LA 70118-3651	U.S. A.RMY ENGINEER DISTRICT, NEW ORLEANS ATTN: CEMVN-CT-E Rachel Woods 7400 LEAKE AVE, Room 155A NEW ORLEANS, LA 70118-3651

9. FOR INFORMATION CALL:	A. NAME Rachel A. Woods	B. TELEPHONE NO. (Include area code) (NO COLLECT CALLS) (504) 862-1561

SOLICITATION

NOTE: In sealed bid solicitations "offer" and "offeror" mean "bid" and "bidder".

10. THE GOVERNMENT REQUIRES PERFORMANCE OF THE WORK DESCRIBED IN THESE DOCUMENTS *(Title, identifying no., date):*

Task Order for HubZone MATOC

West Bank and Vicinity, New Orleans, Louisiana, Westwego to Harvey Canal, Hurricane and Storm Damage Risk Reduction System (HSDRRS), New Westwego Pumping Station to Orleans Village, Phase 2, First Lift Levee and Floodwalls at Westminster Pumping Station, WBV-14c.2, Jefferson Parish, LA; ED 09-071

This is an HubZone MATOC BEST VALUE procurement.

The work consists of clearing and grubbing, degrading existing levee, placement of compacted fill, installation of geotextile, fertilizing, seeding and mulching; maintenance of access roads; windrowing for erosion control; construction of reinforced concrete floodwalls; levee tie-in construction; painting; concrete scour protection; driving steel sheet piling, steel h-piles; structural excavation and backfill; temporary flood protection and other incidental work thereto.

The deadline for submitting questions regarding the subject solicitation is April 22, 2010, 2:00 PM CST. Any questions received after this deadline will not be considered.

11. The Contractor shall begin performance within 10 calendar days and complete it within 535 calendar days after receiving ☐ award, ☒ notice to proceed. This performance period is ☒ mandatory, ☐ negotiable. ***(See _____.)***

12A. THE CONTRACTOR MUST FURNISH ANY REQUIRED PERFORMANCE AND PAYMENT BONDS? *(If "YES," indicate within how may calendar days after award in Item 12B.)* ☒ YES ☐ NO	12B. CALENDAR DAYS 3

13. ADDITIONAL SOLICITATION REQUIREMENTS:

A. Sealed offers in original and 6 copies to perform the work required are due at the place specified in Item 8 by 1400 ***(hour)*** local time April 30, 2010 ***(date).*** If this is a sealed bid solicitation, offers will be publicly opened at that time. Sealed envelopes containing offers shall be marked to show the offeror's name and address, the solicitation number, and the date and time offers are due.

B. An offer guarantee ☒ is, ☐ is not required.

C. All offers are subject to the (1) work requirements, and (2) other provisions and clauses incorporated in the solicitation in full text or by reference.

D. Offers providing less than 60 calendar days for Government acceptance after the date offers are due will not be considered and will be rejected.

OFFER *(Must be fully completed by offeror)*

14. NAME AND ADDRESS OF OFFEROR *(Include ZIP Code)*	15. TELEPHONE NO. *(Include area code)*
	16. REMITTANCE ADDRESS *(Include only if different than Item 14)*
CAGE CODE NO. DUNS NO.	
CODE FACILITY CODE	

17. The offeror agrees to perform the work required at the prices specified below in strict accordance with the terms of this solicitation, if this offer is accepted by the Government in writing within _____ calendar days after the date offers are due. *(Insert any number equal to or greater than the minimum requirement stated in Item 13D. Failure to insert any number means the offeror accepts the minimum in Item 13D.*

AMOUNTS ▶

18. The offeror agrees to furnish any required performance and payment bonds.

19. ACKNOWLEDGMENT OF AMENDMENTS

(The offeror acknowledges receipt of amendments to the solicitation - give number and date of each)

AMENDMENT NO.										
DATE										

20A. NAME AND TITLE OF PERSON AUTHORIZED TO SIGN OFFER *(Type or print)*	20B. SIGNATURE	20C. OFFER DATE

AWARD *(To be completed by Government)*

21. ITEMS ACCEPTED:

22. AMOUNT	23. ACCOUNTING AND APPROPRIATION DATA

24. SUBMIT INVOICES TO ADDRESS SHOWN IN *(4 Copies unless otherwise specified)* ▶	ITEM 26	25. OTHER THAN FULL AND OPEN COMPETITION PURSUANT TO ☐ 10 U.S.C 2304(c) ( ) ☐ 41 U.S.C 253(c) ( )
26. ADMINISTERED BY CODE WEST BANK AREA OFFICE U.S. ARMY CORPS OF ENGINEERS 5750 BAYOU ESTATES BLVD MARRERO, LA 70073		27. PAYMENT WILL BE MADE BY USAED NEW ORLEANS C/O USACE, FINANCE CENTER (UFC) ATTN: CEFC-AO-P 5720 INTEGRITY DRIVE MILLINGTON, TN 38054-5005

CONTRACTING OFFICER WILL COMPLETE ITEM 28 OR 29 AS APPLICABLE

☐ 28. NEGOTIATED AGREEMENT *Contractor is required to sign this document and return _____ copies to issuing office.)* Contractor agrees to furnish and deliver all items or perform all work requirements identified on this form and any continuation sheets for the consideration stated in this contract. The rights and obligations of the parties to this contract shall be governed by (a) this contract award, (b) the solicitation, and (c) the clauses, representations, certifications, and specifications incorporated by reference in or attached to this contract.

☐ 29. AWARD *(Contractor is not required to sign this document.)* Your offer on this solicitation is hereby accepted as to the items listed. This award consummates the contract, which consists of (a) the Government solicitation and your offer, and (b) this contract award. No further contractual document is necessary.

30A. NAME AND TITLE OF CONTRACTOR OR PERSON AUTHORIZED TO SIGN *(Type or print)*		31A. NAME OF CONTRACTING OFFICER *(Type or print)*	
30B. SIGNATURE	30C. DATE	31B. UNITED STATES OF AMERICA BY	31C. AWARD DATE

General Decision Number: LA100008 03/12/2010 LA8

Superseded General Decision Number: LA20080008

State: Louisiana

Construction Type: Heavy

Counties: Jefferson, Orleans, Plaquemines, St Bernard, St Charles, St James, St John the Baptist and St Tammany Counties in Louisiana.

HEAVY CONSTRUCTION PROJECTS (Includes flood control, water & sewer lines, and water wells. Also includes elevated storage tanks in all listed parishes except Plaquemines and St. James. Excludes industrial construction-chemical processing, power plants, and refineries.)

Modification Number	Publication Date
0	03/12/2010

CARP1846-006 07/01/2009

	Rates	Fringes
CARPENTER (formbuilding/formsetting)	$ 21.31	6.35
Millwright/Piledriverman	$ 21.31	6.35

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* ELEC0130-005 12/01/2009

JEFFERSON, ORLEANS, PLAQUEMINES, ST. BERNARD, ST. CHARLES, ST. JAMES, AND ST. JOHN THE BAPTIST PARISHES

	Rates	Fringes
ELECTRICIAN (including low voltage wiring)	$ 25.75	8.86

ELEC1077-002 09/01/2009

ST. TAMMANY PARISH

	Rates	Fringes
ELECTRICIAN (including low voltage wiring)	$ 21.50	6.34

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* ENGI0406-018 07/01/2009

	Rates	Fringes
OPERATOR: Power Equipment (Undefined)		
Bulldozer	$ 21.26	6.70
Mechanic	$ 23.31	6.70

PLAS0567-003 07/01/2009

JEFFERSON, ORLEANS, PLAQUEMINES, ST. BERNARD, ST. CHARLES, ST. JOHN THE BAPTIST, and ST. TAMMANY PARISHES

	Rates	Fringes
Cement Mason/Concrete Finisher	$ 23.06	4.24

PLAS0812-003 06/01/2004

ST. JAMES PARISH

	Rates	Fringes
Cement Mason/Concrete Finisher	$ 21.85	0.00

PLUM0060-002 12/01/2009

JEFFERSON, ORLEANS, PLAQUEMINES, ST. BERNARD, ST. CHARLES, ST. JAMES (Southeastern Portion), ST. JOHN THE BAPTIST, and ST. TAMMANY PARISHES

	Rates	Fringes
PLUMBER/PIPEFITTER (excluding pipe laying)	$ 25.77	8.93

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* PLUM0198-005 01/01/2010

ST. JAMES PARISH (Northwestern Portion)

	Rates	Fringes
PLUMBER (excluding pipe laying)	$ 25.44	9.33

SULA2004-007 05/13/2004

	Rates	Fringes
CARPENTER (all other work)	$ 13.75	2.60
Laborers:		
Common/Landscape	$ 9.88	0.00
Fence	$ 11.24	0.00
Flagger	$ 8.58	0.00
Mason Tender	$ 7.25	0.00
Pipelayer	$ 9.84	0.00
PIPEFITTER (excluding pipelaying)	$ 17.52	4.51
Power equipment operators:		
Backhoe/Excavator	$ 14.42	0.00
Crane	$ 16.34	3.30
Dragline	$ 16.50	0.00
Front End Loader	$ 13.89	0.00
Oiler	$ 10.03	0.00
Truck drivers:		
Dump	$ 11.01	0.00
Pickup	$ 12.25	0.00

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

In the listing above, the "SU" designation means that rates listed under the identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the

Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

NOTICE TO CONTRACTOR

This solicitation contains two sets of goals for minority participation in construction crafts on this contract. They are the New Orleans Hometown Plan and the New Orleans Standard Metropolitan Statistical Area (SMSA).

Contractor will determine the goals applicable to him by the following:

Hometown Plan applies only to those contractors who are signatory to the Hometown Plan and utilizing crafts signatory to the plan.

New Orleans Standard Metropolitan Statistical Area (SMSA) applies to all contractors in the New Orleans SMSA area not signatory to the Hometown Plan, or utilizing crafts not signatory to the plan.

Federal Register/Vol. 45, No. 194/Friday, October 3, 1980

SOLICITATION PROVISION
NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION
TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY

The Bidder's attention is called to "EQUAL OPPORTUNITY" and "LOCAL AFFIRMATIVE ACTION PLAN" clauses of the contract.

The acceptable ranges of minority manpower utilization, expressed in percentage terms, are as follows:

Timetables	Goals for Minority Participation for Each Trade_____	Goals for Female Participation in Each Trade____
Indefinitely	20% - 23 %	6.9%

The Bidder shall, within 5 days after a request therefor by the Contracting Officer of his duly authorized representative, submit the following information.

(a) A list of the construction trades he intends to use, either directly or through subcontractors at any tier, in the performance of work covered by this solicitation;

(b) A list of the labor organizations with which he has collective bargaining agreements and which are signatories to the Hometown Plan with respect to trades for which specific commitments to goals of minority manpower utilization are set forth in the Hometown Plan;

(c) A list of the labor organizations with which he has collective bargaining agreements and which are not signatories to the Hometown Plan or which are signatories thereto but with respect to trades for which no specific commitments to goals of minority manpower utilization are set forth in the Hometown Plan, and

(d) A list of all current construction work or contracts to which he is a party in any capacity in the covered area.

As used in this NOTICE and the contract to result from this solicitation:

(a) "Hometown Plan" or "Plan" means the NEW ORLEANS Plan, consisting of "An Agreement for Implementation of Employment of Minorities in the New Orleans Building Construction Industry."

(b) **"The covered area" means Orleans, Jefferson, St. Bernard, St. Tammany, St. Charles, St. John, Lafourche, Plaquemines, Washington, Terrebonne, Tangipahoa*, Livingston** and St. James*** Parishes, Louisiana.**

(c) **"Director, OFCC" means the Director, Office of Federal Contract Compliance, United States Department of Labor, or any person to whom he delegates authority; and**

(d) **"Minority" means Negro, Spanish-surnamed American, Oriental, and American Indian, and includes both men and women.**

***** **Area covered is east of the Illinois Central Railroad.**

****** **Area covered is southeast of the line from a point of the Livingston & Tangipahoa Parish line adjacent from New Orleans and Baton Rouge.**

******* **Area covered is southeast of a line drawn from the town of Gramercy to the point of intersection of St. James, Lafourche and Assumption Parishes.**

NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY (APRIL 1984)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

Goals for Minority Participation for Each Trade		Goals for Female Participation for Each Trade
SMSA Counties MS	19.2%	6.9%
SMSA Counties LA	31.0%	6.9%
Non-SMSA Counties	27.7%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in the geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the Federal Register in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Program office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on (1) its implementation of the Equal Opportunity clause, (2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and (3) its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract. Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the Director, Office of Federal Contract Compliance Programs, within 10 working days following award of a construction subcontract in excess of $10,000 at any tier for construction work under the contract resulting from this solicitation. The notifications shall list the –

(1) Name, address, and telephone number of the subcontractor;

(i) Employer identification number of the subcontractor;

(2) Estimated dollar amount of the subcontract;

(3) Estimated starting and completion dates of the subcontract;

and

(4) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is (FAR 52.222-23) Economic Area 113, New Orleans, LA as follows:

<u>Standard Metropolitan Statistical Area</u>

(SMSA) Counties:
0920 Biloxi – Gulfport, MS - 19.2%
MS Hancock; MS Harrison; MS Stone

5560 New Orleans, LA - 31.0%
LA Jefferson; LA Orleans; LA St. Bernard; LA St. Tammany

<u>Non-Standard Metropolitan Statistical Area</u>

(Non-SMSA) Counties - 27.7%
LA Assumption; LA Lafourche; LA Plaquemines; LA St. Charles;
LA St. James; LA St. John the Baptist; LA Tangipahoa;
LA Terrebonne; LA Washington; MS Forrest; MS Lamar; MS Marion;
MS Pearl River; MS Perry; MS Pike; MS Walthall

Task Order for HubZone MATOC
WB14c2-09-H-0026

US Army Corps
of Engineers ®
New Orleans District

West Bank & Vicinity, New Orleans, LA.
Westwego to Harvey Canal
Hurricane and Storm Damage
Risk Reduction System (HSDRRS)

NEW WESTWEGO P.S.
TO ORLEANS VILLAGE
PHASE 2, FIRST LIFT LEVEE AND
FLOODWALLS AT WESTMINSTER PUMPING
STATION

WBV-14C.2

Jefferson Parish, Louisiana

Construction Solicitation
and Specifications

April 2010

ED 09-071

DEPARTMENT OF THE ARMY

NEW ORLEANS DISTRICT, CORPS OF ENGINEERS

P.O. BOX 60267

NEW ORLEANS, LOUISIANA 70160-0267

REPLY TO
ATTENTION OF:

April 9, 2010

SOLICITATION: Task Order for HubZone MATOC

FOR: West Bank & Vicinity, New Orleans, Louisiana, Westwego to Harvey Canal, Hurricane and Storm Damage Risk Reduction System (HSDRRS) New Westwego P.S. to Orleans Village, Phase 2, First Lift Levee and Flood Walls at Westminster Pumping Station, WBV-14c.2, Jefferson Parish, Louisiana
ED 09-071

TO OPEN: Proposals are due by April 30, 2010 at 2:00 PM, Local Time and Place, New Orleans, LA

I. NOTE THE AFFIRMATIVE ACTION PROGRAM REQUIREMENT OF THE EQUAL OPPORTUNITY CLAUSE WHICH MAY APPLY TO THE CONTRACT RESULTING FROM THIS SOLICITATION.

II. NOTE THE CERTIFICATION OF NONSEGREGATED FACILITIES IN THIS SOLICITATION. *Bidders, offerors and applicants are cautioned to note the "Certification of Non-segregated Facilities" in the solicitation. Failure of a bidder or offeror to agree to the certification will render his bid or offer non-responsive to the terms of solicitations involving awards of contracts exceeding $10,000 which are not exempt from the provisions of the Equal Opportunity clause.*

III. (DFARS 204.7302) Prospective contractors must be registered in the CCR database prior to award of a contract. By regulation, no DoD contract can be awarded to any contractor that is not registered in the Department of Defense “Central Contractor Registration” (CCR). If your company is not currently registered in the CCR you may do so by simply going to http://www.ccr.gov. You will be required to provide your company’s Dun and Bradstreet number. If you do not already have a D&B number, one can be obtained simply by calling Dun and Bradstreet at (800) 333-0505.

BIDDERS MUST PROVIDE FULL, ACCURATE AND COMPLETE INFORMATION AS REQUIRED BY THIS SOLICITATION AND ITS ATTACHMENTS. THE PENALTY FOR MAKING FALSE STATEMENTS IN BIDS IS PRESCRIBED IN 18 U.S.C. 1001. (FAR 52.214-4 APR 1984)

DESCRIPTION AND MAGNITUDE OF WORK: The work consists of clearing and grubbing, degrading existing levee, placement of compacted fill, installation of geotextile, fertilizing, seeding and mulching; maintenance of access roads; windrowing for erosion control; construction of reinforced concrete floodwalls; levee tie-in construction; painting; concrete scour protection; driving steel sheet piling, steel h-piles; structural excavation and backfill; temporary flood protection and other incidental work thereto.

NOTE: ALL WORK UNDER THESE SPECIFICATIONS SHALL BE PERFORMED IN ACCORDANCE WITH THE PROVISIONS OF EM 385-1-1 "CORPS OF ENGINEERS SAFETY AND HEALTH REQUIREMENTS MANUAL", DATED SEPTEMBER 2008.

http://www.usace.army.mil/CESO/Documents/EM385-1-1FINAL.pdf

ATTENTION:

Effective January 1, 2005, all Contractors who submit an offer/bid are required to register in the Online Representations and Certifications Applications (ORCA). See FAR Clauses 25.204-7 and 52.204-8 for required information. The Web site for ORCA is http://orca.bpn.gov. ORCA registration replaces some of the Representations and Certifications normally found in Section 0600.

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SECTION 00010 - BIDDING SCHEDULE

West Bank and Vicinity New Orleans, Louisiana
Westwego to Harvey Canal,
Hurricane and Storm Damage Risk Reduction System (HSDRRS)
New Westwego P.S. to Orleans Village,
Phase 2, First Lift Levee and Floodwalls at Westminster Pumping Station, WBV-14C.2,
Jefferson, Parish, Louisiana

Item	DESCRIPTION	Estimated Quantity	Unit	Unit Price	Estimated Amount
0001	Mobilization and Demobilization	1	LS		
0002	Timber Mat Bridge	1	EA		
0003	Truck Wash-Down Rack	1	LS		
0004	Demolition	1	LS		
0005	Separator Geotextile	1,000	SY		
0006	Reinforcement Geotextile	7,460	SY		
0007	Settlement Geotextile	480	SY		
0008	Clearing and Grubbing	1	LS		
0009	Embankment, Compacted Fill	671,000	CY		
0010	Embankment, Uncompacted Fill	143,500	CY		
0011	Surfacing	200	CY		
0012	Seeding and Mulching	143	AC		
0013	Lime Soil Amendment (Optional)	143	TON		
0014	Sulfur Soil Amendment (Optional)	71	TON		
0015	Fertilizer				
0015AA	First 25,740 LBS	25,740	LBS		
0015AB	All Over 25,740 LBS	6,420	LBS		
0016	Reinforced Concrete Floodwall	1	LS		
0017	Piling, Steel Sheet Type PZ-22	7,332	SF		
0018	Piling, Steel Sheet Type PZ-27	5,215	SF		

0019	Furnish and Deliver Steel H-Pile (HP 14X73)	8,753	LF		
0020	Drive Steel H-Pile (HP14X73)	8,753	LF		
0021	Concrete Scour Protection	3,040	SY		
0022	Chain Link Fence	155	LF		
0023	Chain Link Fence Gate, 5 foot	1	EA		
0024	Videotape and Photographic Documentation	1	LS		

OPTION AREA - A

Item	DESCRIPTION	Estimated Quantity	Unit	Unit Price	Estimated Amount
0025	Demolition	1	LS		
0026	Clearing and Grubbing	1	LS		
0027	Embankment, Compacted Fill	21,600	CY		
0028	Embankment, Uncompacted Fill	7,500	CY		
0029	Seeding and Mulching	3.5	AC		
0030	Lime Soil Amendment (Optional)	3.5	TON		
0031	Sulfur Soil Amendment (Optional)	1.75	TON		
0032	Fertilizer				
0032AA	First 615 LBS	615	LBS		
0032AB	All Over 615 LBS	451	LBS		

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 OMITS 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.

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.

NOTE 4: OPTIONAL CONTRACT LINE ITEMS. The optional contract line items are numbers 0012, 0013, and 0024 thru 0032.

NOTE 5: OPTIONAL ITEMS. The Government may require the delivery of the numbered line item(s), identified in the schedule as optional items, in the quantities and prices stated in the schedule. The Contracting Officer may exercise the options by written notice to the Contractor. Bidders shall bid on all items including optional items (see “Evaluation of Options” FAR 52.217-5). Failure to bid on all items will result in a non-responsive bid.

NOTE 6: EVALUATION OF OPTIONS (FAR 52.217-5 JUL 1990). The Government will evaluate offers for award purposes by adding the total price for all options to the total price for this basic requirement. Evaluation of options will not obligate the Government to exercise the option(s).

NOTE 7: RAPID VENDOR PAYMENT: Web based instructions for the submission of invoices; http://www.mvn.usace.army.mil/ebs/rapid_vendor_payment.asp

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

Item Nos. 0015 and 0032 is 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 Nos. 0015 and 0032.

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 Nos. 0015 and 0032 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 Nos. 0015 and 0032 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 00130 – PROPOSAL EVALUATION CRITERIA

1.1 SCOPE

In accordance with FAR 15.304, the following factors will be considered in evaluating the non-cost aspects of the proposals. Narrative color descriptors have been selected to highlight the strengths and weaknesses of each offerors proposal for each evaluation factor, paragraph 1.5 (items (1.) through (4.) below). In evaluating a contractor's proposal, evaluators must document the proposal's strengths and weaknesses. Using succinct, clearly stated narratives, evaluators will indicate the impact to the Government of the strengths and/or weaknesses, providing supporting facts and rationale. If the proposal exceeds the Government's expectations in relation to the evaluation criteria/standards, it forms the basis for "strength." If the proposal is below the Government's expectations in relation to the evaluation criteria/standards, it forms the basis for "weakness." A final narrative summary shall be employed when evaluating proposals in accordance with Section 00130 of the Request for Proposals.

This is a Request for Proposal (RFP). Proposals will be evaluated by a Source Selection Evaluation Board (SSEB) comprised of representatives of the Corps of Engineers. Award will be made to that offeror, determined by the Government, who can accomplish the requirements set forth in the RFP in a manner most advantageous to the Government considering both cost and non-cost factors. The Government reserves the right to award this Contract to other than the lowest price offeror after consideration of all factors.

1.2 SOURCE SELECTION USING THE TRADE-OFF PROCESS

The Government will select the offer that represents the best value to the Government by using the trade-off process described in FAR Part 15. This process permits tradeoffs between price and technical merit/quality and allows the Government to accept other than the lowest priced offer or other than the highest technically rated offer. The award decision will be based on a comparative assessment of proposals against all source selection criteria in the solicitation.

1.3 RELATIVE IMPORTANCE OF PRICE TO THE TECHNICAL EVALUATION FACTORS

All non-cost evaluation factors (i.e. technical), when combined are significantly more important than cost or price. The Government is concerned with striking the most advantageous balance between Technical Merit (i.e., quality and timeliness) and cost to the Government (i.e., price).

EVALUATION CRITERIA and FACTORS

The Government will evaluate each of the four (4) non-cost factors and rate the proposals. Non-cost factors are not all equal in importance. The following terminology is used to describe the relative importance of each non-cost factor:

(1) MORE SIGNIFICANT

(2) LESS SIGNIFICANT

(3) COMPARATIVELY EQUAL

Non-cost factors 1, 2, and 3 are listed in no order of importance. Factors 1, 2 and 3 are comparatively equal. Factor 4 is less significant than factors 1, 2 and 3.

1.4 EVALUATION FACTORS AND SUBMITTAL REQUIREMENTS

Non-Cost

1. Past Performance
2. Technical Approach and Key Personnel
3. Proposed Construction Duration
4. Small Business Participation Plan

Cost

5. Price

FACTOR 1. Past Performance

PAST PERFORMANCE WILL BE RATED AS FOLLOWS:

Excellent BLUE	**Essentially <u>no doubt</u> exists that the offeror will successfully perform the required effort based on their performance record. Risk Level: Very Low**
Good GREEN	**<u>Little doubt</u> exists that the offeror will successfully perform the required effort based on their performance record. Risk Level: Low**
Adequate YELLOW	**<u>Some doubt</u> exists that the offeror will successfully perform the required effort based on their performance record. Risk Level: Moderate**
Marginal ORANGE	**<u>Significant doubt</u> exists that the offeror will successfully perform the required effort based on their performance record. Risk Level: High**
Poor RED	**It is <u>extremely doubtful</u> that the offeror will successfully perform the required effort based on their performance record. Risk Level: Very High**
Unknown GREY	**The offeror has little/no relevant past performance upon which to base a meaningful performance risk prediction. Risk Level: Unknown**

Offerors will be evaluated on the quality of similar work performed within the last SIX (6) YEARS using the evidence provided by the Offeror and other sources. Offerors shall submit no more than FOUR (4) past projects for this factor. The success of work performed on similar requirements as a prime or significant subcontractor will be evaluated. Offerors should include past performance, the ability to construct projects of similar scope (Levee and Floodwall Construction), an ability to work adjacent to other Contractors, the ability to construct hurricane protection structures in the area of existing structures; a history that demonstrates familiarity with the local area and the unique conditions of the soils in the Southeastern Louisiana region, and the ability to develop safe and effective traffic control methodologies. Relevant past performance should include construction of floodwalls and levees, working in excavation with temporary flood protection & interim dikes; and working with typical civil works materials such as: conventionally reinforced concrete, structural steel, embankment, crushed stone, riprap, reinforcement and separator geotextile and other miscellaneous materials. The emphasis should be on the capability and performance of construction, and should include project delivery under aggressive schedules, coordination with other adjacent Contractors, ability to adapt to changing requirements and conditions, and specific examples of challenges faced and solutions proposed and executed. The Offeror should include the percentage of the final contract amount that was self-performed work along with a description of that self performed work. Offerors should provide their safety record, including their current experience modifier rate, along with documentation on lost time accidents for each project. For each project, the Offeror's proposal should describe the quality of product/service provided for each project in narrative form and describe ultimate customer satisfaction with the product/service. The Offeror should also include any

documentation from the customer stating their satisfaction (i.e., letters of recommendation, commendations, ratings, etc.).

The information evaluated may include parent or affiliated companies. If past performance information provided is from a parent or affiliated company, the proposal must contain a letter from the parent or affliliated company identifying which of their resources will be available to the Offeror for the proposed work. The letter must also identify what role the parent or affiliated company will have in performance of the proposed work.

Relevant past performance of a parent or affiliate will be evaluated on the same basis as relevant past performance of an individual Offeror, provided that sufficient information is supplied to establish the parent or affiliate's role in the contract work as well as the resources available for such work.

An Offeror relying on the past performance record of a parent or affiliate will not be penalized for that fact. However, such offeror's proposal must demonstrate there is a reasonable basis for such reliance; otherwise there will be no basis for crediting the Offeror with the past performance of the parent or affiliate.

The Government reserves the right to check any or all cited references to verify supplied information and to assess owner satisfaction. Past performance information may be obtained from other than the sources identified by the Offeror, to include past performance evaluations in the Construction Contracts Appraisal Support System (CCASS). In addition references indicated on the overall project list may be contacted. The Government may also use any other past performance information, from other sources, outside of the Offerors proposal in their evaluation. The Government may also use other tools to gather information regarding an Offeror's qualifications and past performance. The Offeror should provide information on any problems encountered on the identified contracts and the corrective actions taken. Offerors shall provide a listing of all exposure and accident experience incidental to work for the past two years (as a minimum these records shall include exposure work-hours and a log of occupational injuries and illnesses).

Submittals: For this factor, the Contractor’s proposal shall include as a minimum the following for each of the past performance examples:

1. A narrative that describes the Contractor’s past performance and that demonstrates that the cited work is relevant to the scope and magnitude of this project.

2. The contract’s established completion date and the actual completion date, and an explanation for any delay in completion. Include a description of any modifications changing the delivery date.

3. The contract price at award and the completed contract price, including any change orders or modifications affecting price.

4. A listing of the major subcontractors utilized for each contract, especially for complex projects completed in abbreviated timelines. List the percentage of the project self-performed and that percentage performed by the major subcontractors.

5. List points of contact with telephone and other contact information for each contract experience included in the proposal.

6. A listing of the number of crews and subcontractors utilized for each contract, especially for complex projects completed in abbreviated timelines.

7. Offerors shall provide a listing of all exposure and accident experiences incidental to work for the past two years (as a minimum these records shall include exposure work-hours and a log of occupational injuries and illnesses). Safety Submittal: OSHA Form 300 or equivalent as prescribed by 29 CFR 1904.

7. RECOMMENDED ITEMS:

a. For Corps of Engineers contracts, provide a copy of the signed Construction Contract Administration Support System (CCASS) and/or Contractor Performance Assessment Reporting System (CPARS) evaluation issued at the completion of the project. For non-Corps of Engineers contracts, provide a copy of the performance rating issued by the contracting agent.

OR:

b. For all cited past performance in your proposal, the Government strongly encourages offerors to include a past performance survey. The template for this survey is provided in this solicitation. The past performance survey should be filled out by the reference and include the individual's point of contact information. The Government may verify all past performance submitted as part of your offer and failure to include valid contact information will prevent that verification.

Evaluation and Rating Guidelines: Past Performance will be evaluated based on the results of work performed that is determined to be relevant to this requirement. Offerors will be evaluated on the quality of similar work performed as a prime contractor or a significant subcontractor within the last SIX (6) years, using the evidence provided by the Offeror. The information evaluated may include predecessor companies. Higher evaluation ratings will be given for past performance on those projects that are similar in scope and complexity to this project and clearly demonstrate a Contractor's capabilities to successfully construct a similar project with similar schedule. Offerors with past performance in construction of floodwalls and levees will be rated higher than those without. An Offeror's past performance as a prime, self performing Contractor will be evaluated more favorably than that for which the Offeror acted as a subcontractor. Offerors with a higher percentage of self performed construction work will be rated

higher than those with a lower percentage. Projects that are not yet complete may be rated lower than those that are complete. Offerors that demonstrate that they provided schedule advancement during previous projects will be rated higher than those that did not. Offerors with a lower experience modifier rate will be rated more favorably than those with a higher rate. Offerors with no relevant performance history will be rated as "Unknown" in this factor.

NON-COST FACTORS 2 AND 3 SHALL BE RATED AS FOLLOWS:

Exceptional - BLUE

Contractor's proposal significantly exceeds requirements of the solicitation and demonstrates exceptional understanding of the goals and objectives of the contract. Significant strengths exist with no weaknesses. No additional submissions and/or re-writes to the original submission are required. There is a very high probability of success with a low risk to the Government.

Very Good - GREEN

Contractor's proposal exceeds requirements of the solicitation and demonstrates clear understanding of the goals and objectives of the contract. Significant strengths exist with minor weaknesses. Minor additional submissions and/or rewrites to the original submission may be required. There is a high probability of success with a low to moderate risk to the Government.

Satisfactory - YELLOW

Contractor's proposal meets the minimum requirements of the solicitation and demonstrates an acceptable level of understanding relative to the goals and objectives of the contract. Several strengths exist as well as some weaknesses. Some additional submissions and or re-writes to the original submission may be required. There is a good probability of success with a moderate risk to the Government.

Marginal - ORANGE

Contractor's proposal is close to, but does not meet the minimum requirements of the solicitation and demonstrates that the contractor does not fully understand the goals and objectives of the contract. Some strengths exist with many weaknesses. Significant additional submissions and/or re-writes to the original submission are required. There is a low probability of success with a high risk to the Government.

Unsatisfactory - RED

Contractor's proposal does not meet the requirements of the solicitation and demonstrates that the contractor does not understand the goals and objectives of the contract. No strengths exist with many weaknesses. A completely new submission is required to meet the requirements of the solicitation. There is a low to poor probability of success with an unacceptable risk to the Government.

FACTOR 2. Technical Approach and Key Personnel.

Offerors shall include a detailed technical approach to executing the construction portion of this contract. Offerors shall describe the technical approach for construction of this project and discuss how they propose to manage labor and other resource constraints to achieve an aggressive schedule in a narrative submittal. Offerors shall include a sequence of work, CPM schedule, and list of resources required to build the entire contract. Offerors shall identify in both narrative and drawing format preliminary designs for constructing their; Temporary Flood Protection, and proposed Crane utilization. The narrative should include the Offeror's proposed measures to make up schedule in the event that they fall behind. The schedule shall be supported by listing the crew sizes and equipment required for each major component of the work. The schedule shall include the contractor's construction procedure and phasing plan. The average number of hours worked per crew per week shall be furnished. Schedules shall be furnished in primavera or equivalent scheduling software. Proposed innovations that gain schedule are a plus; however, the innovations must be proven on past projects. Offerors shall identify specific areas that will be self performed and areas that will be constructed by subcontractors.

Qualifications and capabilities for key personnel that will be utilized for construction shall be provided. Personnel listed shall include both Prime Contractor personnel and any contemplated major subcontractor personnel. Major subcontractor information submitted shall be with firms with whom the contractor has had successful prime/sub relationships in the past or with whom the Offeror intends to use on this project.

Submittals:

1. Offerors shall provide plans and methodology to be used in accomplishing the construction of the flood protection system, and the number of crews capable of working concurrently as well as identifying any operations that will be conducted by night crews or by special means. The Offerors shall provide the type and quantity of major equipment that will be used to construct the flood protection system. The Offerors shall also provide an expedited network analysis identifying the major items of work so that the reasonableness of the construction sequencing and duration can be assessed. The Offerors shall include proposed design concepts; in both narrative and drawing format, for constructing their; Temporary Flood Protection and proposed Crane utilization.

2. Offerors' technical approach narrative shall describe the proposed level of prime performed work and major subcontractor activity.

3. Offerors shall provide the qualifications and experience of key personnel, project managers, superintendents, safety and quality control officers, and staff identified for participation on projects under this contract.

4. Offerors shall include resumes that include each individual's years of experience in position; experience in projects of similar scope, magnitude, complexity, and schedule.

5. Project Schedule. Offerors shall provide a CPM schedule as required in the above paragraphs and any documents or letters of agreement to address equipment, labor and material availability.

Evaluation and Rating Guidelines: Thorough, detailed and complete narratives and schedules will be rated more highly than those not providing sufficient detail or discussion of the proposed approach. Omission of requested information will result in lower ratings than those who provide all the information identified. **Note:** The approach, schedule, and listing of resources provided under this factor will be utilized to support the duration proposed and evaluated in Factor Three (3) "Proposed Construction Duration". A poorly supported duration represents a higher risk to the Government and will therefore receive a lower rating. Offerors will be evaluated on the quality, education, and experience possessed to meet or provide the expertise requirements of proposed work under the contract. The Offeror shall demonstrate that it has the necessary structure, experience, and qualified resources within its proposed organization to effectively manage, control, administer and execute the integrated design and construction operations, safety and quality control program, and subcontracts. Offerors with key personnel that have worked on projects of the scope, magnitude, and complexity of this project will be rated more favorably than key personnel without such experience. Offerors with key personnel with more experience in the proposed position will be rated more favorably than key personnel with less experience.

FACTOR 3. Proposed Construction Duration.

The Offeror shall propose the construction duration; however, a proposed duration extending beyond 535 calendar days for completion of the work will be considered unsatisfactory for this factor. The proposed construction duration for the work shall be used in the contract and will be the basis for assessing Liquidated Damages. The proposed construction duration must be fully supported by information provided in Factor 2 - Technical Approach and Key Personnel.

Submittals: Proposed calendar days for completion of work. Proposed duration must be supported by schedule submitted under Factor 2. To avoid duplication of information, sequences of work, schedules, and lists of resources supporting the proposed construction duration shall be included with Factor 2.

Evaluation and Rating Guidelines: Proposed construction durations that are not supported by the information required under Factor 2 will be considered technically unacceptable. Shorter durations fully supported by the information required under Factor 2 will be rated more favorably than longer durations.

FACTOR 4. Small Business Participation Plan

NON-COST FACTOR 4 SHALL BE RATED AS FOLLOWS:

Color Rating	EVALUATION CRITERIA				
	Extent of Achievement of RFP Small Business Participation Objectives	**Extent to which SBP Goal Rationale Supports Achievement of Successful Overall Contract Performance**	**Extent to which Corporate/Division SB Participation Goals Satisfy RFP Objectives**	**Realism of Proposed SB Participation Goals Based on Proposal & Performance Risk**	**Strengths and Weaknesses**
Exceptional BLUE	Proposed Goals Achieve or Nearly Achieve Almost all RFP Objectives	Extensive & Compelling Rationale for All Proposed Goals	Goals Achieve or Nearly Achieve Almost all RFP Objectives	Highly Realistic	Strengths Far Outweigh Weaknesses
Very Good GREEN	Proposed Goals Achieve or Nearly Achieve Most RFP Objectives, with Meaningful Goals Against Remaining Objectives	Substantive Rationale for Almost All Proposed Goals	Goals Achieve or Nearly Achieve Most RFP Objectives, with Meaningful Goals Against Remaining Objectives	Realistic	Strengths Outweigh Weaknesses
Satisfactory YELLOW	Meaningful Goals Proposed Against Almost all RFP Objectives	Reasonable Rationale for the Majority of Proposed Goals	Meaningful Goals Against Almost all RFP Objectives	Somewhat Realistic	Strengths and Weaknesses Are Offsetting
Marginal ORANGE	Meaningful Goals Proposed Against Only Several RFP Objectives	Limited Rationale for the Majority of Proposed Goals	Meaningful Goals Against Only Several RFP Objectives	May not be Realistic	Weaknesses Outweigh Strengths
Unsatisfactory RED	Failed to Propose Meaningful Goals Against Almost All RFP Objectives	Little or No Meaningful Rationale Provided for Proposed Goals	Goals Fail to Satisfy Almost all RFP Objectives	Not Realistic	Weaknesses Far Outweigh Strengths

The small business participation plan will be evaluated for compliance with FAR part 19 and the goals presented below.

Subcontract Awards	**% of Total Subcontracted Dollars Subcontracted by Large Prime Businesses**
Small Business (SB)	22.0%
Small Disadvantaged Business (SDB)	5.0%
Women-Owned Small Business (WOSB)	5.0%
HUBZone Small Business	3.0%
Veteran-Owned Small Business	3.5%
Service-Disabled Veteran-Owned Small Business	3.0%

Evaluation and Rating Guidelines:

All offerors, both small and large businesses, are required to submit Small Business Participation Plan information in accordance with DFARS 215.304 that shall include the following:

(a) Type of Business of Prime Contractor: Check all applicable boxes

{ } Large
{ } Small (also check type of Small Business below)
- { } Small Non-Disadvantaged Business
- { } Small Disadvantaged Business
- { } Woman-Owned Small Business
- { } HUB Zone Small Business
- { } Veteran Owned Small Business
- { } Service Disabled Veteran Owned Small Business

(b) Percentage of total contract value of your participation as a Prime Contractor:
%_____

(c) Percentage of Total Contract Value of Subcontracts

Planned For:	Percentage of Total Contract Value
Large	%_____
Total Small	%_____
Small Non-Disadvantaged	%_____

Small Disadvantaged	%_____
Woman-Owned Small	%_____
HUB Zone Small	%_____
Veteran Owned Small	%_____
Service Disabled Veteran Owned Small	%_____

Each participation percentage above shall be accompanied by detailed supporting documentation regarding the individual commitments. Detailed explanations shall also be provided when the percentages fall short of the DOD goals.

NOTE: The sum of the dollar values and percentages of Small Non-Disadvantaged and Small Disadvantaged should equal the entries for Total Small. However, the sum of all the percentages under Paragraph (d) need not equal 100% since the prime is not included and individual subcontractors may be counted towards more than one category. All percentages should use TOTAL CONTRACT VALUE as a baseline.

(e) List principal supplies/services (be specific) to be subcontracted to:

	Name of Company	Type of Service/Supply
Large:		
Small:		
Small Non-Disadvantaged:		
Small Disadvantaged:		
Woman-Owned Small:		
HUB Zone Small:		
Veteran Owned Small Business:		
Service Disabled Veteran Owned Small:		

NOTE: For purpose of subcontracting, Historically Black Colleges and Universities/Minority Institutions (HBCUs/MIs) are considered as disadvantaged and should be broken out separately.

(f) Prior Performance Information: Provide any information substantiating the offeror's track record of utilizing small business on past contracts. For Large Business: include ACO rating and SF 295 Information. For Large and Small businesses: provide descriptive information for all small business categories. Any information concerning long-term relationships with Small Business subcontractors, such as mentor-protégé relationships, should be provided.

(g) Extent of Commitment: Provide documentation regarding enforceable commitments to utilize any Small Business category, as defined in FAR Part 19, as subcontractors.

Each Large Business offeror shall provide a Small Business Subcontracting Plan that contains all the elements required by FAR 52.219-9. This plan shall be submitted separately from the Small Business Participation Plan information required above, which applies to both large and small businesses. The Small Business Subcontracting Plan is not a requirement for evaluation in source selection, but rather a requirement for award to a large business and will be incorporated into any resultant contract. The Corps of Engineers Small Business subcontracting goals based on total subcontracted dollars are listed below:

Subcontract Awards	**% of Total Subcontracted Dollars Subcontracted by Large Prime Businesses**
Small Business (SB)	70.0%
Small Disadvantaged Business (SDB)	6.2%
Women-Owned Small Business (WOSB)	7.0%
HUBZone Small Business	9.8%
Veteran-Owned Small Business	3.5%
Service-Disabled Veteran-Owned Small Business	2.0%

FACTOR 5. PRICE

The price submitted in response to this solicitation will not be scored but will be subjectively evaluated for reasonableness by the Price Evaluation Board. In the event, during the course of the analysis, the team has reason to question the reasonableness of a price proposal, or has reason to believe there are materially unbalanced line items within a price proposal, the team may conduct such additional reasonable analysis as it requires in order to complete a thorough price analysis. Because the evaluation of the price proposal will represent a portion of the total evaluation, it is possible that an offeror might not be selected because of an unbalanced, unreasonable, or unrealistic price proposal.

Evaluation and Rating Guidelines: The Price/Cost Proposal Schedule submitted in response to this solicitation will be evaluated in accordance with Price Analysis procedures listed in FAR 15.404-1(b).

1.5 RISK EVALUATION

Each proposal will receive a Proposal Risk rating. Risk is not a separate non-cost evaluation factor, but will be evaluated based upon the likelihood that an offeror's proposal will meet the requirements of the solicitation. Proposal Risk will be evaluated as follows:

Low Risk= Proposal weaknesses have little potential to cause disruption of schedule, increase in cost or degradation of performance. Normal contractor effort and normal Government monitoring will probably minimize any difficulties.

Moderate Risk= Approach has weaknesses that can potentially cause some disruption of schedule, increasing in cost, or degradation of performance. However, special contractor emphasis and close Government monitoring will probably minimize difficulties.

High Risk = Approach has weaknesses that have the potential to cause serious disruption of schedule, increase in cost, or degradation of performance even with special contractor emphasis and close Government monitoring. Proposal contains statements regarding indemnification.

1.6 RFP SUBMITTALS

Proposals shall be submitted in three (3) volumes: a Cost Volume, a Past Performance Volume and a Technical Volume. Each offeror is required to submit his original proposal and 6 copies of all three volumes. Offerors submitting proposals for this project should limit submissions to data essential for evaluation of proposals so that a minimum of time and monies will have been expended in preparing information required herein. However, in order to be effectively and equitably evaluated, the proposals must include information sufficiently detailed to clearly describe the Offeror's technical approach and past performance to successfully complete the project. All proposals shall be tabbed for each of the evaluation factors. Your response to this solicitation is limited to **one hundred (100)** 8.5x11 pages for the Technical Volume, with the font size no smaller than 10pt. Drawings or other graphics shall be reduced only to the extent legibility is not lost. A page printed on both sides will be counted as two pages. Pages shall be consecutively numbered.

The Cost Volume shall include:

Items in the Cost Volume are EXCLUDED from the page limitation.

i. SF 1442
ii. Bid Schedule
iii. Representations and Certifications
iv. Bid Bond

The Past Performance shall include:

Items in the Past Performance Volume are EXCLUDED from the page limitation.

Submittals as stated in Section 00130 for Factor 1.

The Technical Volume shall include:

Submittals as stated in Section 00130 for Factors 2, 3 and 4.

Items that must be included with the Technical Volume but are EXCLUDED from the page limitation are:

i. Title sheets and indices
ii. Tables of contents
iii. Resumes of key personnel
iv. Schedule (additionally Schedules/Gantt Charts are not subject to the 8.5x11 size requirement).
v. Subcontracting Plan if required.

PAST PERFORMANCE SURVEY

NAME:_____

TITLE:_____

ADDRESS_____

_____

PHONE: _____

1. How long did the company work under your supervision?

2. Did the company experience any cost overruns?

3. Did the company remain on schedule?

4. Did the company meet their small business goals?

5. Did the company receive any Cure Notices or were they terminated for default?

6. Did the company respond well to changes and did they communicate well with Government personnel?

7. Would you use the company again to execute your requirements?

8. Any other comments regarding this company?

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SECTION 00700 – CONTRACT CLAUSES

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SECTION 00700 – CONTRACT CLAUSES

1. COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK (FAR 52.211-10 - APR 1984)

The Contractor shall be required to

(a) Commence work under this contract within 10 calendar days after the date the Contractor receives the notice to proceed,

(b) Prosecute the work diligently, and

(c) Complete the entire work ready for use not later than 535 calendar days after the date of receipt by him of notice to proceed. The time stated for completion shall include final cleanup of the premises.

(End of Clause)

NOTE. The Contractor is hereby informed that time allowed for completion of work has been established as the shortest reasonable duration and that he/she shall make any and all provisions necessary (multiple crews, overtime, concurrent operations, etc.) to accomplish the work within the available time period.

2. LIQUIDATED DAMAGES - CONSTRUCTION (FAR 52.211-12 – SEPT 2000)

(a) If the Contractor fails to complete the work within the time specified in the contract, the Contractor shall pay liquidated damages to the Government in the amount of $3,270.00 for each calendar day of delay until the work is completed or accepted.

(b) If the Government terminates the Contractor's right to proceed, liquidated damages will continue to accrue until the work is completed. These liquidated damages are in addition to excess costs of repurchase under the Termination clause.

(End of Clause)

3. CONTRACT DRAWINGS AND SPECIFICATIONS (DFARS 252.236-7001 – AUG 2000)

(a) The Government will provide to the Contractor, without charge, one set of contract drawings and specifications, except publications incorporated into the technical provisions by reference, in electronic or paper media as chosen by the Contracting Officer.

(b) The Contractor shall --

(1) Check all drawings furnished immediately upon receipt;

(2) Compare all drawings and verify the figures before laying out the work;

(3) Promptly notify the Contracting Officer of any discrepancies;

(4) Be responsible for any errors that might have been avoided by complying with this paragraph (b); and

(5) Reproduce and print contract drawings and specifications as needed.

(c) In general --

(1) Large-scale drawings shall govern small-scale drawings; and

(2) The Contractor shall follow figures marked on drawings in preference to scale measurements.

(d) Omissions from the drawings or specifications or the mis-description of details of work that are manifestly necessary to carry out the intent of the drawings and specifications, or that are customarily performed, shall not relieve the Contractor from performing such omitted or mis-described details of the work. The Contractor shall perform such details as if fully and correctly set forth and described in the drawings and specifications.

(e) The work shall conform to the specifications and the contract drawings identified on the following index of drawings:

Title	File	Drawing No.
West Bank & Vicinity, New Orleans, LA. Westwego to Harvey Canal Hurricane and Storm Damage Risk Reduction System (HSDRRS) New Westwego P.S. to Orleans Village Phase 2, First Lift Levee (WBV-14C.2) Jefferson Parish, Louisiana	H-8-46932	C-01 thru C-26, X-01 thru X-08
Hurricane Protection Project WBV-14C.2 Floodwalls Westminster Pumping Station Jefferson Parish, Louisiana	H-8-46932	G01-06, B620-626 C100 thru 105, C201, C301, C302, C501 thru 503, S100, S200, S201, S401 thru S404, S500, S501 S600

NOTE: PLAN DRAWING SIGNATURES: The plan drawings accompanying this solicitation have been submitted and approved by the individuals shown in the title blocks on the plans. The actual signatures of the individuals shown on the plans are on file and available for inspection at U.S. Army Engineer District, New Orleans, Corps of Engineers, Attn: CEMVN-ED, P.O. Box 60267, New Orleans, Louisiana 70160-0267, and access thereto may be had upon request.

(End of Clause)

4. PHYSICAL DATA (FAR 52.236-4 - APR 1984)

Data and information furnished or referred to below is for the Contractor's information. The Government shall not be responsible for any interpretation of or conclusion drawn from the data or information by the Contractor.

(a) The indications of physical conditions on the drawings and in the specifications are the result of site investigations by surveys and borings. Field notes, graphic boring logs, field and laboratory test results, and other data on which this information is based are available at U.S. Army Engineer District, New Orleans, Corps of Engineers, Attn: CEMVN-ED, P.O. Box 60267, New Orleans, Louisiana 70160-0267, and access thereto may be had upon request.

(b) Weather Conditions. Data on weather conditions may be obtained from the National Weather Service.

(c) Transportation Facilities. Access to the project area will be via. Lapalco Blvd. in the vicinity of the Seaplane Airport; an existing access road extending from Lapalco Blvd. to an existing concrete bridge on the Grand Cross Canal to the eastern end of the limit of work; and at the western limit of work access for light vehicles will be permitted from an existing access road extending from Lapalco Blvd. thru the New Westwego Pumping Station to the project area.

(d) The Contractor is responsible for keeping streets free of mud, tracking, spillage and/or other surface pollution from his equipment and operations. Contractor shall take whatever means required (i.e., street cleaners, manual labor, water trucks with sprayers) as often as needed to maintain clean streets near the work site. All debris resulting from street cleaning operations shall be hauled off-site and disposed of properly. Failure of the Contractor to comply with these requirements shall be grounds for the Contracting Officer's Representative to require the contractor to stop all work operations until the streets have been cleaned of debris

(e) Estimates of quantities involved in certain items of work for which bids are being solicited on a lump sum or job basis have been made for the use of the Government. Copies of these quantity estimates may be viewed/obtained by

contacting the District Commander, Attn: Cindy Nicholas, same address as stated in subparagraph (a) above. It is expressly understood that the accuracy of these estimates is in no way warranted and that the furnishing of this information to a bidder will not relieve him of his responsibility to estimate the quantities involved.

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SECTION 01100 - GENERAL PROVISIONS

1. TIME EXTENSIONS FOR UNUSUALLY SEVERE WEATHER

(a) This provision specifies the procedure for determination of time extensions for unusually severe weather in accordance with the Contract Clause in Section 00700, entitled Default (Fixed Price Construction) (FAR 52.249-10). In order for the Contracting Officer to award a time extension under this clause, the following conditions must be satisfied.

(1) The weather experienced at the project site during the contract period must be found to be unusually severe, that is, more severe than the adverse weather anticipated for the project location during any given month.

(2) The unusually severe weather must actually cause a delay to the completion of the project. The delay must be beyond the control and without the fault or negligence of the Contractor.

(b) The following schedule of monthly anticipated adverse weather delays is based on National Oceanic and Atmospheric Administration (NOAA) or similar data for the project location and will constitute the base line for monthly weather time evaluations. The Contractor's progress schedule must reflect these anticipated adverse weather delays in all weather dependent activities.

MONTHLY ANTICIPATED ADVERSE WEATHER DELAY WORK DAYS
BASED ON (5) DAY WORK WEEK

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
13	8	9	6	6	10	10	9	8	4	6	11

(c) Upon acknowledgment of the Notice to Proceed (NTP) and continuing throughout the contract, the Contractor will record on the daily CQC report, the occurrence of adverse weather and resultant impact to normally scheduled work. Actual adverse weather delay days must prevent work on critical activities for 50 percent or more of the Contractor's scheduled work day.

(d) The number of actual adverse weather delay days shall include days impacted by actual adverse weather (even if adverse weather occurred in previous month), and shall be calculated chronologically from the first to the last day of each month, and shall be recorded as full days. If the number of actual adverse weather delay days exceeds the number of days anticipated in paragraph b, above, the Contracting Officer will convert any qualifying delays to calendar days, giving full consideration for equivalent fair weather work days, and

issue a modification in accordance with the Contract Clause in Section 00700, entitled Default (Fixed Price Construction) (FAR 52.249-10).

2. DAMAGE TO WORK

The responsibility for damage to any part of the permanent work shall be as set forth in the Contract Clause in Section 00700, entitled Permits and Responsibilities (FAR 52.236-7). However, if, in the judgment of the Contracting Officer, any part of the permanent work performed by the Contractor is damaged by flood, earthquake, hurricane, or tornado which damage is not due to the failure of the Contractor to take reasonable precautions or to exercise sound engineering and construction practices in the conduct of the work, the Contractor shall make the repairs as ordered by the Contracting Officer and full compensation for such repairs will be made at the applicable contract unit price or lump sum prices as fixed and established in the contract. If, in the opinion of the Contracting Officer, there is no contract unit or lump sum prices applicable to any part of such work, an equitable adjustment shall be made pursuant to the Contract Clause in Section 00700, entitled Changes (FAR 52.243-4). Except as herein provided, damage to all work (including temporary construction), utilities, materials, equipment and plant shall be repaired to the satisfaction of the Contracting Officer at the Contractor's expense, regardless of the cause of such damage.

3. SAFETY PROVISIONS

The safety provisions as specified herein refer to the 15 Sept 2008 edition of EM 385-1-1.

(a) Accident Reporting and Recordkeeping. Refer to EM 385- 1-1, Section 01.D. Reports shall be submitted on ENG Form 3394. Accidents shall be investigated and reports completed by the immediate supervisor of the employee(s) involved and reported to the Contracting Officer or his/her representative within one working day after the accident occurs. All data reported must be complete, timely and accurate. A follow-up report shall be submitted when the estimated lost time days differs from the actual lost time days.

(b) Accident Prevention Program. (See the Contract Clause in Section 00700, entitled Accident Prevention (AAP) (FAR 52.236-13).) Within 15 days after receipt of Notice of Award of the contract, and at least 7 days prior to the prework conference, seven copies of the Accident Prevention Program shall be submitted to the Contracting Officer for review and acceptance. The program shall be prepared in the following format:

(1) Executed MVN Form 385-43 (Latest Edition), Administrative Plan (available upon request), see Appendix A of EM 385-1-1.

(2) Executed MVN 385-43/1 (Latest Edition), Accident Prevention Plan Checklist and MVN Form 385-43/2 (Latest Edition), Activity Hazard Analysis (available upon request), see Figure 1-1 of EM 385-1-1.

(3) A copy of company policy statement regarding accident prevention.

(4) When marine plant and equipment are in use under a contract, the method of fuel oil transfer shall be included on MVN Form 385-10 (Latest Edition), Fuel Oil Transfer, (available upon request). (Refer to 33 CFR 156).

The Contractor shall have on the construction site during working hours a trained Site Safety and Health Officer (SSHO) in accordance with paragraph 01.A.17 of EM 385-1-1. The Contractor shall not commence physical work at the site until the program has been accepted by the Contracting Officer, or his/her authorized representative. The Contractor may submit its Activity Hazard Analysis only for the first phase of construction provided that it is accompanied by an outline of the remaining phases of construction. All remaining phases shall be submitted and accepted prior to the beginning of work in each phase. Also refer to Section 1 of EM 385-1-1.

(c) Comprehensive Hazard Communication Program. The Contractor shall develop, implement, and maintain at the workplace a written, Comprehensive Hazard Communication Program (see Section 06.B.01 of EM 385-1-1) that includes identification of potential hazards as prescribed in 29 CFR Part 1910.1200 and 29 CFR Part 1926.59, effects of exposure and control measures to be used for chemical products and physical agents that may be encountered during the performance of work on this contract, provisions for container labeling, Material Safety Data Sheets, and employee training program, and other criteria in accordance with 29 CFR Part 1910.1200 and 29 CFR Part 1926.59. Training shall include communication methods and systems to be used (i.e., voice, hand signals, radios or other means), and training in the use and understanding of material safety data sheets and chemical product hazard warning labels. Prior to bringing hazardous substances, as defined in 29 CFR 1910.1200 and 29 CFR Part 1926.59, onto the job site, a copy of the Hazard Communication Program and the Material Safety Data Sheets of each substance shall be submitted to the Contracting Officer and made available to the Contractor's employees as part of its Accident Prevention Program. A site map shall be attached to the inventory list showing where the inventoried hazardous substances are stored. The inventory list and site map shall be updated frequently and whenever hazardous substances arrive at the work site to ensure accuracy.

(d) Daily Inspections. The Contractor shall perform daily safety inspections and record them on the forms approved by the Contracting Officer. A qualified person serving as the Site Safety and Health Officer (SSHO) shall be on site at all times during the contract’s operations. Refer to EM 385-1-1, Section 01.A.17.

Reports of daily inspections shall be maintained at the jobsite in accordance with Section 01 45 04.00 10, "CONTRACTOR QUALITY CONTROL". The reports shall be records of the daily inspections and resulting actions. Each report shall include, as a minimum, the following:

(1) Phase(s) of construction underway during the inspection.

(2) Locations of areas where inspections were made.

(3) Results of inspections, including nature of deficiencies observed and corrective actions taken, or to be taken, date, and signature of the person responsible for its contents.

(e) Safety Sign. The Contractor shall furnish, erect, and maintain a safety sign at the site where indicated by the Contracting Officer. The sign shall conform to the requirements of this paragraph and the drawing included at the end of this section. The lettering shall be black, the safety circle and cross green, and the background white. When placed on a floating plant, the sign may be half size. The sign shall be erected as soon as practicable, but not later than 15 calendar days after the date established for commencement of work. The data required shall be current. The sign coordinator is Mary Pizzuto @ 504.862.2000.

(f) Ground Fault Protection. Electrical equipment used on this contract shall be equipped with ground fault circuit interrupters in accordance with EM 385-1-1, Section 11.C.05.

(g) Off-The-Road Haulage. Along the levee alignment, whenever practical, the Contractor shall use a one-way road for trucking material to point of placement. Haul roads built and maintained for this work shall comply with the following:

(1) One-way haul roads for off-the-road equipment; e.g., belly dumps, scrapers, and off-the-road trucks shall have a minimum usable width of 25-feet. One-way haul roads for over-the- road haulage equipment only (e.g., dump trucks, etc.) may be reduced to a usable width of 15-feet. When the Contracting Officer determines that it is impractical to obtain the required width for one-way haul roads (e.g., a road on top of a levee), a usable width of not less than 10-feet may be approved by the Contracting Officer, provided a positive means of traffic control is implemented. Such positive means shall be signs, signals, and/or signalmen and an effective means of speed control.

(2) Haul roads shall be graded and otherwise maintained to keep the surface free from potholes, ruts, and similar conditions that could result in unsafe operation.

(3) Grades and curves shall allow a minimum sight distance of 200-feet for one-way roads. Sight distance is defined as the centerline distance an equipment operator (4.5-feet above the road surface) can see an object 4.5-foot above the road surface. When conditions make it impractical to obtain the required sight distance (e.g., ramps over levees), the Contractor shall implement a traffic control system.

(4) Dust Control- Contractor shall take measures to prevent unnecessary dust while transporting earthen material within the levee right-of-way. The embankment shall be kept moist to prevent blowing. Dust abatement will be required in order to permit observation of objects on the roadway at a minimum distance of 300-feet.

(5) Haul roads shall have the edges of the usable portion marked with posts at intervals of 50-feet on curves and 200-feet maximum elsewhere. Such markers shall extend 6-feet above the road surface.

(6) Noise Control – Contractor shall take measures to avoid unnecessary noise appropriate for the ambient sound levels in the area during working hours. All construction machinery and vehicles shall be equipped with standard sound muffling devices, and operated in a manner to cause the least noise, consistent with efficient performance of the work.

(7) Flagmen Service. The Contractor shall furnish flagging services at all times that trucks are hauling during the course of this contract. The use of one or more flagmen is necessary for control of truck-hauling traffic entering and exiting the construction site at all access points. The flagmen shall wear a specially designed, high visibility-orange and reflective-white vest. The flagmen's sign shall be octagonal, at least 15-inches across, mounted on a short handle, with the word "STOP" printed in bold white letters at least 5-inches high with a red background. The sign may be fabricated from sheet metal or other lightweight, semi-rigid material.

(h) Hurricane Plan. A detailed plan for protection, and evacuation of personnel and equipment from the construction site in the event of an impending hurricane or storm, is required as an enclosure to the Contractor's Accident Prevention Program Hazard Analysis. This plan shall be submitted to the Contracting Officer, or his/her representative, for review prior to the preconstruction conference. The plan shall include at least the following:

(1) Sealing Operation. The Contractor shall submit, with his Hurricane Plan, a sealing method of the de-grassed levee embankment and berm prior to evacuation from the construction site before an impending storm. The Contractor may compact with either a steel drum roller(s), pulled by

tractors or dozers, or by dozer(s). A self-powered steel drum roller will not be permitted for sealing operations on slopes steeper than 1V:10H.

a. All equipment used must exert not less than 6.0 psi on the ground surface.

b. If dozers are used for sealing, the dozer shall not weigh less than 20,000 lbs. The dozers initial passes shall be made running parallel to the levee centerline and the final pass shall be made perpendicular to the levee centerline.

(2) The sealing equipment shall be on site at all times during Hurricane Season, between 01 June and 30 November.

(3) The time each phase of the plan will be put in effect. The time shall be the number of hours remaining for the storm to reach the worksite if it continues at the predicted speed and direction.

(4) The estimated time necessary to secure and evacuate the site, including any emergency flood protection and sealing of the de-grassed levee embankment.

(5) Work under this Hurricane Plan will not be measured for payment. Payment for all work associated with the plan, and providing the plant equipment on site during Hurricane Season, shall be distributed amongst the existing bid items.

(i) Emergency Gap Closure Plan.

Should the Contractor be allowed to deviate from the sequence of construction or access methods shown on the drawings, the Emergency Gap Closure Plan as specified below shall be in place during any condition that reduces the existing flood protection elevation.

Hurricane Season extends from 1 June to 30 November. During this period the Contractor may be directed to close gaps in the flood protection caused by construction operations and levee construction limitations shall be followed per Section 31 24 00.00 12 “Embankment” Paragraph “Embankment Work Advancement”. The Contractor shall submit an Emergency Gap Closure Plan to the Contracting Officer and/or his/her Representative, for review and approval prior to removal of any existing flood protection. The plan will be put into effect at any time during construction when a named storm enters the Gulf of Mexico, or at the direction of the Contracting Officer. The plan shall take into account deteriorating weather conditions that may occur before the storm event, which may make earthen material unsuitable for closure. The plan shall clearly demonstrate and/or include the following:

(1) The Contractor shall note that he is required as part of this project to maintain flood protection and shall be allowed a maximum of 24 hours to reconnect and replace any flood protection as specified herein and as affected by his operations. At no time shall the Contractor be allowed to open the flood protection sheet pile or degrade the existing levee where the canal water elevation is within 2-feet of the protected side ground elevation or during eminent conditions where the canal waters could possibly be allowed to flow from the canal side of the flood protection to the protected side. In the event of an impending hurricane or tropical storm the Contractor shall complete a closure of all breaches in the flood protection within 24 hours after being directed to do so by the Contracting Officer.

(2) It shall be mandatory that the Contractor maintain materials, including earthen materials, and equipment on site to provide immediate closure of all areas during inclement weather conditions, an impending and approaching hurricane, or as directed by the Contracting Officer. The Contractor shall note the type of equipment and materials on site and all details of his emergency procedures and sequence for providing closure. Closures during emergency situations shall require the Contractor to immediately repair, construct and/or replace all areas for complete closure and flood protection.

(3) After the passing of a storm or as directed by the Contracting Officer, the Contractor shall remove all temporary closures, and repair or replace any permanent construction damaged by it's installation. No measurement or payment will be made for maintaining materials, labor or equipment as required herein, or for any other cost associated with maintaining readiness to perform a closure for work required by the emergency gap closure plan. Payment for all work required for the installation, maintenance, and removal of the required emergency closures during impending high water or storm tidal surges, and repair of permanent construction damaged by the installation of the emergency gap closure will be made under FAR clause 52.243-4 entitled "Changes".

(j) Hazardous Energy Protection. The Contractor shall develop, implement and maintain at the workplace, a written Control of Hazardous Energy (Lockout/Tagout) System. Refer to Section 12 of EM 385-1-1.

(k) Contractor shall employ a competent person at each project to function as the Site Safety and Health Office (SSHO). The SSHO will manage the Contractor's APP. (This may be a collateral duty responsibility unless specified differently in the contract.) See EM 385-1-1 Appendix A. paragraphs 4 and 7. The person(s), as a minimum, must have completed the 30-hour OSHA Construction safety class or an equivalent course applicable to the work to be

performed and given by qualified instructors. Such training shall have been within the last three (3) years. An SSHO shall be on-duty at all times when work is being performed and shall be responsible for enforcing and implementing the Contractor's Safety and Health Program in accordance with the accepted APP.

4. INSPECTOR'S FIELD OFFICE

(a) The Contractor shall furnish, throughout the contract period, for the exclusive use of the Government employees, a temporary waterproof building, or trailer, to be utilized as a field office. It shall be conveniently located at the site of construction and shall be independent of any building, or trailer, used by the Contractor. Toilet facilities and potable water, including bottled water with water cooler, shall be provided within the Inspector's office. It shall be equipped with approved electrical wiring, private telephone service, a telephone answering machine, the use of a copy and fax machine, at least three ceiling lamp receptacles, at least three double convenience outlets, and the required switches and fuses, to provide 110-volt power for lighting and operating a laptop computer and printer. It shall be equipped with an air conditioning unit to provide cooling in warm or hot weather, and a heater, properly installed and vented in accordance with the National Fire Protection Association Code, for heating in cold weather, as required. The Contractor shall make the necessary arrangements to obtain or to generate the power required to operate the air conditioning unit, lights, and laptop computer and printer, and the power or fuel required for the heater, and shall bear the cost thereof. A drafting table providing a working surface having dimensions of at least 4-feet by 6-feet (which may consist of a piece of plywood, at least 3/4-inch thick, hinged to a wall of the building with hinged legs) shall be installed in the building. The building shall have a built-in locker, extending from the floor to the ceiling, having dimensions of at least 2- feet by 5-feet, with a shelf 12-inches from the top, and one door equipped with two hinges, a hasp and a padlock. All exterior doors and window frames of the building shall be equipped with iron security guards. The door shall also be equipped with butt hinges and a cylinder lock. One draftsman's stool, two strong chairs and one desk shall be provided. The building or trailer shall conform to the following minimum requirements:

Ceiling height, not less than	6-feet 9-inches
Floor space, no less than	480 square feet
Windows, not less than	4
Doors, outside	2
Rooms	3

Screens over windows; walls and ceilings shall be insulated; and interior walls finished.

(b) The building, or trailer, shall be removed by the Contractor after completion of all work under this contract and before final acceptance thereof. No separate

payment will be made for furnishing, maintaining, providing the prescribed utilities, and removing the inspector's field office, but the cost of the same shall be distributed throughout the existing bid items. In the event the Contractor fails to furnish the required facilities, the Government may elect to procure the required facilities and deduct all costs from amounts due or to become due under this contract.

(c) The Contractor shall provide daily janitorial services for this and other buildings at the site throughout the life of the contract. The cost of this service shall be distributed throughout the existing bid items and there shall be no separate payment.

(d) The Contractor shall provide a hard line broadband high speed internet service and modem to the government inspector's trailer for exclusive use of the government. The service shall have a minimum download speed of 10 Mbps and a minimum upload speed 1.5 Mbps. The contractor shall be responsible for the installation, maintenance, and monthly service fees necessary to provide continuous high speed internet service for the duration of the contract.

5. PROJECT SIGN

Prior to commencement of work, the Contractor shall construct a project sign at the site of the work at a location directed by the Contracting Officer. The sign, which will identify the work with the Corps of Engineers, shall be 4 feet by 6 feet in size and shall conform to the requirements of the PROJECT SIGN drawing and installation instructions attached at the end of this section. The lettering for the 2 feet by 4 feet section of the sign with the Corps logo shall be white; all other lettering shall be black. Lettering for the project name shall be Helvetica Bold, all other lettering shall be Helvetica Regular. The sign coordinator is Mary Pizzuto @ 504.862.2000. No separate payment will be made for construction and erection of the project sign and all costs in connection therewith will be considered an incidental obligation of the Contractor. Upon completion of the work, the sign shall become the property of the Contractor and shall be removed from the job site.

6. RIGHTS-OF-WAY

a. The rights of entry required for the work to be constructed under this contract, within the rights-of-way limits indicated on the drawings, have been obtained by the Government and are provided without cost to the Contractor. The Contractor shall make its own investigations to determine the conditions, restrictions, and difficulties that may be encountered in the transportation of equipment and material to and from the work site. The proposed work, including rights-of-way and limits of construction, as defined by these specifications and as shown on the drawings, is in compliance with all applicable Federal and state environmental laws and regulations. Upon completion of the Contractor’s work,

rights-of-way furnished by the Government shall be returned to its original condition prior to construction unless otherwise noted.

b. The Contractor must work within the limits of construction provided on the drawings. If the Contractor proposes a deviation from the Government furnished rights-of-way for his convenience, the Contractor shall notify the Contracting Officer or its representative in writing. Contractor shall not provide any permanent rights-of-way for the project. The Contractor is cautioned that any deviation to the Government furnished rights-of-way is subject to all applicable Federal and state environmental laws and regulations. Compliance with these environmental laws and regulations may require additional National Environmental Policy Act (NEPA) documents, cultural resources surveys, coordination with the Louisiana State Historical Preservation Officer, water quality certification, modification of the Federal consistency determination, etc. The Government is ultimately responsible for environmental compliance; therefore, the Government will determine the additional environmental coordination and documentation necessary for a proposed deviation to the Government furnished rights-of-way. For any environmental investigations the Government is to perform on areas outside of Government furnished rights-of-way, the Contractor shall provide sufficient rights of entry to the Government. The Contracting Officer will advise the Contractor of the additional environmental coordination and documentation that must be completed. The Government shall be responsible for any additional environmental compliance; however, the Contractor may conduct specific tasks identified by the Government. The Government will offer advice and assistance to the Contractor in conducting these tasks. Depending on the environmental impact of the proposed deviation, obtaining the coordination and documentation may not be approved or could take as much as 180 days for approval by the Government. The Government must review, approve and ensure distribution of all environmental compliance documentation and ensure all comments on the same have been resolved before any utilization of any areas outside of the Government furnished rights-of-way. The Contractor shall reimburse the Government for actual expenses incurred for assistance in completing or attempting to complete additional environmental coordination and documentation, which expenses will not exceed one hundred thousand ($100,000.) dollars. There is no guarantee that environmental compliance will be obtained; therefore, the Contractor shall assume all risks and liabilities associated with pursuing a deviation. Any delays resulting from the deviation and/or the environmental coordination and documentation shall not be made the basis of any Contractor claim for increase in the contract cost and/or increase in contract time. Deviations will be at Contractor's sole risk and liability, including, but not limited to, such liabilities associated with items such as hazardous substances regulated under the Comprehensive Environmental Response, Compensation, and Liability Act (42 U.S.C. 9601 et. seq.), and at no cost to the Government. Government assistance in obtaining additional environmental clearances does not relieve the Contractor of responsibility for complying with other Federal, state or local licenses and permits.

7. CERTIFICATES OF COMPLIANCE

Any certificates required for demonstrating proof of compliance of materials with specification requirements shall be executed in three (3) copies. Each certificate shall be signed by an official authorized to certify on behalf of the manufacturing company and shall contain the name and address of the Contractor, the project name and location, and the quantity and date or dates of shipment or delivery to which the certificates apply. Copies of laboratory test reports submitted with certificates shall contain the name and address of the testing laboratory and the date or dates of the tests to which the report applies. Certification shall not be construed as relieving the Contractor from furnishing satisfactory material, if, after tests are performed on selected samples, the material is found not to meet specified requirements.

8. ENVIRONMENTAL LITIGATION

(a) If the performance of all or any part of the work is suspended, delayed, or interrupted due to an order of a court of competent jurisdiction as a result of environmental litigation, as defined below, the Contracting Officer, at the request of the Contractor, shall determine whether the order is due in any part to the acts or omissions of the Contractor or a Subcontractor at any tier not required by the terms of this contract. If the order is not due in any part to acts or omissions of the Contractor (or a Subcontractor at any tier) other than as required by this contract, such suspension, delay, or interruption shall be as if ordered by the Contracting Officer under the Contract Clause in Section 00700, entitled Suspension of Work (FAR 52.242-14). The period of such suspension, delay or interruption shall be considered unreasonable, and an adjustment shall be made for any increase in the cost of performance of this contract (excluding profit) as provided in that clause, subject to all the provisions thereof.

(b) The term "environmental litigation", as used herein, means a lawsuit alleging that the work has an adverse effect on the environment or that the Government has not duly considered, either substantively or procedurally, the effect of the work on the environment.

9. UTILITIES AND IMPROVEMENTS

(a) All known utilities within the limits of the work, such as pipes, communication lines, power lines, etc., that would interfere with construction work will be removed, modified or relocated by local interests or utility companies at no cost to the Contractor unless otherwise noted in the plans and/or specifications. The Contractor, however, shall cooperate with the authorities or company representatives and shall conduct his/her operations in such manner as to result in a minimum of inconveniences to the owners of said utilities. The Contractor shall notify each utility owner by certified mail 45 days, 15 days, and again 72

hours prior to the date utilities must be moved and provide a copy of the written notifications to the Contracting Officer.

(b) Any unidentified pipes or structures which may be found within the limits of the work during the course of construction shall not be disturbed nor shall construction or excavation be performed at these locations unless and until approved by the Contracting Officer. Payment for ordered excavation, if any, will be made in accordance with the Contract Clause entitled Differing Site Conditions (FAR 52.236-2).

(c) Notices to Owners and Authorities. The Contractor shall notify owners of utilities when prosecution of the work may affect them. When it is necessary to temporarily disconnect utility services, the Contractor shall give notices sufficiently in advance to enable the affected persons to provide for their needs. Notices shall conform to any applicable local ordinance and, whether delivered orally or in writing, shall include appropriate information concerning the interruptions and instructions on how to limit their inconvenience. Utilities and other concerned agencies shall be contacted at least 48 hours (excluding Saturdays, Sundays and legal holidays) prior to cutting or closing streets or other traffic areas or excavating near underground utilities or pole lines. A list of utility owners and points of contact are provided below:

UTILITIES WITHIN THE LIMITS OF LEVEE WORK

IDENTIFIER	LOCATION B/L Sta. \ Offset	OWNER / POC	FACILITY/UTILITY & DISPOSITION
CUL	103+50(+/-) B/L\ 350' RT	Abandoned	48'' Concrete Pipe Culvert – To Be Removed By Contractor Concurrent With Construction.
G-1	106+07(+/-) B/L\ 60' LT	West Jefferson Levee District	Gate At Central Ave., Do Not Disturb, No Access..
P-1	118+53 B/L	Entergy / Lee Vinson, 1000 West Harrimaw Ct, Met., La. 70001, Office:504-219-4206 Cell: 504-343-1809 rvinson@entergy.com	Power Lines & Poles - To Be Relocated By Owner Prior to Construction.
F-1	125+10 B/L	West Jefferson Levee District	Chain Link Fence & Gate, To Be Removed And Replaced By Contractor During Construction.
T-1	125+63 B/L	AT&T / Lloyd Massey 1010 Hancock St., Gretna, La., 70053	Communication Lines & Poles - To Be Relocated By Owner Prior to Construction.

IDENTIFIER	LOCATION B/L Sta. \ Offset	OWNER / POC	FACILITY/UTILITY & DISPOSITION
		504-364-6801	
P-2	125+63 B/L	Entergy / Sidney "Guy" Johnson, 1001 Virgil St., Gretna, La. 70056, Ph. : 504-365-3626	Power Lines & Poles - To Be Relocated By Owner Prior to Construction.
F-2	125+38 B/L / 250' RT	HilCorp Energy / Rohn Webre 985-397-1323	Chain Link Fence & Gate, To Be Removed And Replaced By Contractor During Construction.
R-1	125+86 B/L / On C/L	HilCorp Energy / Rohn Webre 985-397-1323	Ramp, To Be Removed And Replaced By Contractor Concurrent With Construction.
BB	130+30(+/-) \ 30' RT	Private Owner	Billboard w/ Pile Foundation – To Be Removed By Owner Prior To Construction.
P-3	125+63 B/L to 138+15 B/L (Along Lapalco)	Entergy / Sidney "Guy" Johnson, 1001 Virgil St., Gretna, La. 70056, Ph. : 504-365-3626	Power Lines & Poles – Do Not Disturb.
F-3	138+15 B/L / 154' RT	West Jefferson Levee District	Chain Link Fence & Gate, To Be Partially Removed And Replaced By Contractor During Construction.
F-4	145+07 B/L \ ON C/L	West Jefferson Levee District	Chain Link Fence & Gate, To Be Removed And Replaced By Contractor During Construction.
G-2	175+10(+/-) B/L\ 110' LT	West Jefferson Levee District	Gate At Rue Louis Phillipe, Do Not Disturb, No Access.
F-5	186+40 B/L \ ON C/L	West Jefferson Levee District	Chain Link Fence & Gate, Do Not Disturb.
PL-1	255+65 B/L \ ON C/L	Gulf South / Gerald Roser, 504-469-5903, x-236, Gerald.roser@bwpmlp.	25'' Dia. Gas Pipeline – (Option Area) To Be Relocated By Owner – OR- Do Not Disturb, Pipeline Protection To be Provided By Contractor Prior To Construction.
G-3	256+43(+/-) B/L\ 258' LT	West Jefferson Levee District	Access Gate At Access Road, Do Not Disturb, Access Only.
F-6	259+02 B/L \ ON C/L	West Jefferson Levee District	Chain Link Fence & Gate, To Be Partially Removed And Replaced By Contractor During Construction.

IDENTIFIER	LOCATION B/L Sta. \ Offset	OWNER / POC	FACILITY/UTILITY & DISPOSITION
			(OPTION AREA _ A)
N/A	69+94.62 B/L thru 260+56 B/L	West Jefferson Levee District	Station Markers, To Be removed And Replaced By Owner After Construction.

(d) Entergy Electric Transmission and Distribution Lines (Entergy Distribution). While constructing the project, the Contractor will be working near, and under the Entergy overhead power lines. The Contractor shall contact Entergy prior to start of construction to coordinate all construction work with Entergy in order to insure safety. The Contractor shall not truck haul with the bed upright while under the power lines. The Contractor's personnel shall attend a brief safety class prior to construction at Entergy to become familiar with all safety procedures and requirements. All existing Entergy facilities that have not been completely relocated at the time of construction shall be closely coordinated between Entergy Distribution and the Contractor.

(1) The Contractor shall maintain a minimum distance from all power lines as required by NEC, Entergy and EM 385-1-1. Contractor shall be responsible for determining the maximum height and reach attainable by any part of any piece of equipment, and after coordinating with Entergy to determine the height and location of the power line, shall determine if the required clearance will be violated. The Contractor shall not work within the required clearance of the lines unless the lines are de-energized. If the clearance will be violated, prior to beginning any operations in the area, the Contractor shall coordinate with Entergy to de-energize the line. If the line is to be de-energized but is to remain in place, rather than being removed, the Contractor shall establish a procedure with Entergy to ensure that the Contractor shall have sufficient notice to allow removal of all equipment which may violate the required clearance from the area prior to the line being re-energized. These procedures and requirements shall also apply to any buried power lines.

(2) It shall be the Contractor's sole duty and responsibility to provide for the safety of his men, equipment, subcontractors and the general public during operations in the vicinity of overhead and underground power lines; and to assure that all of his operations and those of his employees and subcontractors comply with OSHA, EM 385-1-1, the National Electric Safety Code, and all applicable Parish, State and Federal codes and regulations.

(3) The utility contact is: Entergy Distribution, Attn: Mr. Guy Johnson, P.O. Box 61000, New Orleans, LA 70161-1000, (504)365-3625.

(e) Temporary Timber Mat Bridges. The Contractor shall construct timber mat bridges wherever the haul routes traverse existing pipeline crossings in order to prevent damage to and subsidence of the pipelines. High visibility markers shall be placed at the edges of the mat for safety. The Contractor shall construct the timber mat bridges in accordance with the details shown on the drawings whenever hauling across water lines, telephone conduits, or other utilities in the path of haul routes. All equipment, both light and heavy, shall cross each pipeline only at the location where the pipeline bridge crossings have been placed over each pipeline crossing. Upon completion of construction work, the Contractor shall remove the timber mat bridges from the project site. Measurement for the temporary timber mat bridges will be per each satisfactorily constructed and maintained by the Contractor. Payment for the timber mat bridges, including construction, placement, maintenance and the subsequent removal, will be made at the contract unit price per each for "Timber Mat Bridge". Price and payment shall constitute full compensation for furnishing all plant, labor, equipment and materials for the construction, placement, maintenance and subsequent removal of the timber mat bridges as specified herein and as shown on the drawings.

(f) Flag person/s shall be on duty at each access point from the project site. The Contractor shall submit to the Contracting Officer's representative an Access Route Plan including signage to be posted along highways and location of flagmen.

10. PERMISSIBLE HOURS OF WORK

No work shall be done at the jobsite between 9:00 p.m. and 6:00 a.m. on Monday through Sunday. The Contractor will be allowed to work on Saturdays, Sundays and Holidays. Prior to 6:00 a.m. the Contractor shall not start up any equipment nor have any trucks for delivery, service, hauling, etc. operations arrive at the jobsite. Trucks shall remain on designated truck routes until 6:00 a.m.. Adequate lighting for thorough inspection of night operations shall be provided by the Contractor at his/her own expense.

11. AGGREGATE SOURCES

(a) Concrete aggregates meeting the quality requirements of these specifications have been produced from the sources listed below:

30 October 2009

PRODUCER	NEAREST TOWN TO PIT*	TYPE	PIT DESIGNATION
B. & M. B., Inc.	Jackson, LA	S, G	Dudley Pit
B. & M. B., Inc.	Wakefield, LA	S, G	Island Pit

PRODUCER	NEAREST TOWN TO PIT*	TYPE	PIT DESIGNATION
B. & M. B., Inc.	Jackson, LA	S, G	Thompson Pit
Barriere's Construction Co., LLC	Arcola, LA	S, G	Ponder Pit
Bayou Sand and Gravel, LLC	Amite, LA	S, G	Bayou Sand and Gravel
Blain Sand & Gravel, Inc.	Georgetown, MS	S, G	Bailey Pit
Bunch Gravel Co.	Clinton, LA	G	Bunch Gravel Plant #1
Bunch Gravel Co.	Darlington, LA	S, G	Bunch Gravel Plant #2
Fleniken Sand & Gravel Co.	Grangeville, LA	S, G	Flen-Rock Pit (Spears Lease)
Irv Daniel	Wakefield, LA	S, G	Island Pit
Lafarge North America	Watson, LA	S, G	Clemons Plant
Lafarge North America	Pearl River, LA	S, G	Honey Island Operation
Lafarge North America	Sun, LA	S, G	Isabel Plant
Lambert Gravel Co., Inc.	Darlington, LA	S, G	Billups Pit (B 1)
Lambert Gravel Co., Inc	Bains, LA	S, G	Harvey Garrett & Butler lease (G-2)
Martin Marietta Aggregates	Crystal Springs, MS	S, G	Crystal Springs Plant (Bell Pit)
Martin Marietta Aggregates	Smithland, KY	LS	Three Rivers Quarry
Mears Sand & Gravel Co.	Watson, LA	S, G	Penny & Easterly Lease
Norris Springs Gravel	Sicily Island, LA	S, G	Norris Springs Gravel Pit
Pine Bluff Sand & Gravel Co.	Delaware, AR	SS	River Mountain Quarry
Southern Aggregates, LLC	Watson, LA	S, G	Glaciel Lease
Southern Aggregates, LLC	Watson, LA	S, G	Mullins Lease
Southern Aggregates, LLC	Watson, LA	S, G	Weyerhauser Lease
Standard Gravel Co., Inc.	Hattiesburg, MS	S	Plant 80
Standard Gravel Co.	Enon, LA	S, G	Enon Pit (C-10 & CZ-30 leases)
Standard Gravel Co.	Franklinton, LA	G	Green Lakes Plant
Standard Gravel Co.	Pearl River, LA	S, G	Nicholson Plant (Nic-7)
Texas Industries, Inc.	DeRidder, LA	S, G	Anacoco Creek Plant
Texas Industries, Inc.	Perryville, LA	S, G	Perryville Plant
Texas Industries, Inc.	Woodworth, LA	S, G	Woodworth Plant
Tower Rock Stone Co.	Scott City, MO	LS	Grays Point Quarry

Type:			
G = Gravel	LS = Limestone	S = Sand	SS = Sandstone

*"Nearest Town to Pit" according to LDOTD Official State Highway Map and Rand McNally Road Atlas copyrighted 2005.

(b) Concrete aggregates may be furnished from any of the above listed sources or at the option of the Contractor may be furnished from any other source

designated by the Contractor and approved by the Contracting Officer, subject to the conditions hereinafter stated and as specified in Section

(c) After the award of the contract, the Contractor shall designate in writing only one source or one combination of sources from which he/she proposes to furnish aggregates. If the Contractor proposes to furnish aggregates from a source or from sources not listed above, he/she may designate only a single source or single combination of sources of aggregates. If a source for coarse and/or fine aggregate so designated by the Contractor is not approved for use by the Contracting Officer, the Contractor may not submit for approval other sources but shall furnish the coarse and/or fine aggregate, as the case may be, from a source listed above at no additional cost to the Government.

(d) Approval of a source of concrete aggregate is not to be construed as approval of all material from that source. The right is reserved to reject materials from certain localized areas, zones, strata, or channels, when such materials do not conform to the quality requirements of ASTM C 33-93 (CRD-C 133), Concrete Aggregates. Aggregate gradations shall be in accordance with the specified requirements of Section 03 31 00.00 12. Materials produced from any source, including those listed above, shall also meet all the requirements of Section 03 31 00.00 12 of the Technical Specifications.

(e) It is the Contractor's responsibility to determine that the aggregate source or combination of sources selected is capable of supplying the quantities and gradations needed and at the rates needed to maintain the scheduled progress of the work. The inability of a source or combination of sources to maintain the necessary volume shall not be the basis for any claim for a time extension.

12. STONE SOURCES

(a) On the basis of information and data available to the Contracting Officer, stone meeting the quality requirements of these specifications has been produced from the sources listed below:

April 2009

PRODUCER	NEAREST TOWN TO PIT*	TYPE	PIT DESIGNATION
APAC	Bloomsdale, MO	LS	APAC Brickeys Quarry
Applied Environmental Management, Inc.	El Progresso, Cortez, Honduras, Central America	Basalt	Applied Environmental Management Quarry
Bradley Contracting	Cord, AR	DO	Batesville Quarry
Bussen Quarries, Inc.	Mehlville, MO	LS	Bussen Quarry
Cahaba Disaster Recovery	Sayre, AL	SS	Fishtrap Mine
Central Stone Co.	Withers Mill (Monroe City), MO	LS	Pit # 1

PRODUCER	NEAREST TOWN TO PIT*	TYPE	PIT DESIGNATION
Central Stone Co.	Perry, MO	LS	Pit # 9
Titan Cumberland Resources	Salem, KY	LS	Smith Quarry
Delta Companies, Inc.	Cape Girardeau, MO	LS	Southeast Missouri Stone Co. Quarry
Delta Companies, Inc.	Hendrickson, MO	DO	Williamsville Stone Co. Quarry
Florida Rock Industries	Columbus, GA	GN	Columbus Quarry
Florida Rock Industries	Humm Wye, IL	SS	Golconda Quarry
Florida Rock Industries	Calvert City, KY	LS	Grand Rivers Quarry
Florida Rock Industries	Macon, GA	GN	Macon Quarry
Florida Rock Industries	Tyrone, GA	GR	Tyrone Quarry
Granite Mountain Quarries	Sweet Home, AR	GR	Granite Mountain, Quarry # 1
Granite Mountain Quarries	Sweet Home, AR	GR	Granite Mountain, Quarry # 2
Granite Mountain Quarries	Bryant, AR	GR	Granite Mountain, Quarry # 3
Guadalupe Resources, LLC	El Progresso, Cortez, Honduras, Central America	Basalt	Guadalupe Resources Quarry
Hoover Incorporated	Allsboro, AL	LS	Allsboro Quarry
Industrial Minerals Products Division/3M	Little Rock, AR	GR	3M Arch Street Quarry
Lafarge of North America	Cave In Rock, IL	LS	Cave-In-Rock Quarry
Martin Marietta Aggregates	Uniontown, MO	LS	Appleton Quarry
Martin Marietta Aggregates	Black Rock, AR	DO	Black Rock Quarry (Sloan/Cavanaugh)
Martin Marietta Aggregates	Fredonia, KY	LS	Fredonia Quarry
Martin Marietta Aggregates	Smithland, KY	LS	Three Rivers Quarry
Pine Bluff Sand & Gravel Co.	Delaware, AR	SS	River Mountain Quarry
Shippers and Sellers LLC	Kellerman, AL	SS	Kellerman Quarry
Strack Excavating and Hauling (Strack Stone Co.)	Cape Girardeau, MO	LS	Strack Quarry # 1
Tower Rock Stone Co.	Scott City, MO	LS	Grays Point Quarry
Tower Rock Stone Co.	St. Genevieve, MO	LS	Tower Rock Stone Co.
Travis Creek Energy, LLC	Trafford, AL	SS	Trafford Quarry
Vulcan Materials Co.	Black Rock, AR	DO	Black Rock Quarry
Vulcan Materials Co.	Cherokee, AL	LS	Cherokee Quarry
Vulcan Materials Co.	Tuscumbia, AL	LS	Pride Quarry
Vulcan Materials Co.	Lake City, KY	LS	Grand River Quarry
Vulcan Materials Co.	Judsonia, AR	SS	Searcy Quarry

PRODUCER	NEAREST TOWN TO PIT*	TYPE	PIT DESIGNATION
Vulcan Materials Co.	Tuscumbia, AL	LS	Tuscumbia Plant (Quarry #114)
White River Materials, Inc.	Cord, AR	LS	Cord Quarry

*"Nearest Town to Pit" according to Rand McNally Road Atlas copyrighted 2005.

Type Legend: DO - Dolomite LS - Limestone GN – Gneiss GR - Granite (Granite or Nepheline syenite) SS - Sandstone

(b) Stone may be furnished from any of the above listed sources, or at the option of the Contractor may be furnished from any other source designated by the Contractor and accepted by the Contracting Officer, subject to the conditions hereinafter stated.

(c) It is the Contractor's responsibility to determine that the stone source or combination of sources selected is capable of supplying the quantities and gradation needed and at the rate needed to maintain the scheduled progress of the work.

(d) After the award of the contract, the Contractor shall designate in writing only one source or one combination of sources from which he/she proposes to furnish stone. If the Contractor proposes to furnish stone from a source not listed above, he/she may designate only a single additional source for stone. Samples for acceptance testing shall be provided as required by Section 32 15 00.00 12 of the Technical Specifications. If a source for stone so designated by the Contractor is not accepted for use by the Contracting Officer, the Contractor may not propose other sources but shall furnish the stone from a source listed above at no additional cost to the Government.

(e) Acceptance of a source of stone is not to be construed as acceptance of all material from the source. The right is reserved to reject materials from certain localized areas, zones, strata, or channels, when such materials are unsuitable for stone as determined by the Contracting Officer. Materials produced from a listed or unlisted source shall meet all requirements of Section 32 15 00.00 12 of these Technical Specifications.

13. CLAY SOURCES

(a) On the basis of information and data available to the Contracting Officer, the lands containing the clay sources from the sites designated below have been approved by the Government for all environmental concerns. The borrow materials from the listed sites shall be mined. The designated sites, below, may be capable of producing the quality of clay material meeting the requirements set forth in SECTION 31 24 00.00 12 , paragraph entitled Embankment Materials and are subject to the subparagraphs (b) through (e) below. Borrow materials

mined from lands other than from the designated sites have not been Government cleared and the material quality not validated. In all cases, the Contractor remains responsible for obtaining all local and state permits, see SECTION 31 23 00.00 12, paragraph entitled Submittal Package Requirements.

February 2010

Site Name	Point of Contact	Contact Information	Location
River Birch, Phase 1	Vic Culpepper	Office: 504-436-1288 Cell: 504-915-6006	Avondale, LA
River Birch, Phase 2	Vic Culpepper	Office: 504-436-1288 Cell: 504-915-6006	Avondale, LA
Pearlington Dirt	Johnny Dollar	Cell: 318-366-8218 jdollar.chapel.hill@gmail.com	Pearlington, MS
Diaz Property (DK Aggregates)	Terry Lovelace	Office: 601-922-9355 Cell: 601-955-7795 tlovelace@uci-ms.com	St. Bernard Parish, LA
Eastover	Jerry Howell Evenstar, Inc.	Cell: 504-559-1606 jerryhowell992@hotmail.com	New Orleans, LA
St. Gabriel	Michael Daigle	Office: 225-216-7483 mdaigle@trcsolutions.com	Carville, LA
*1025 Florissant	Michael Palmer	Cell: 504-812-8016 palmertruckin@yahoo.com	St. Bernard Parish, LA
Acosta	Jens Lorenz	Office: 985-626-5204 Cell: 985-264-2425 gsdi@bellsouth.net	St. Bernard Parish, LA
3C Riverside Properties	H. Ray Coleman	Office: 901-309-5844 raycoleman@earthlink.net	St. Charles Parish, LA
*Myrtle Grove	Josh Jones	Cell: 985-707-3667 Office: 985-726-2618 josh@american-materials.com	Plaquemines Parish, LA
*Myrtle Grove	Charles Smith	Cell: 731-438-1281 Office: 713-926-3993 tennesseematerialscorp@hotmail.com	Plaquemines Parish, LA
Frierson	M. Matt Durand	Office: 337-394-6574	Hancock County, MS
Meyer	Joe Chorens	Office: 713-668-6766 jchorens@sbcglobal.net	Plaquemines Parish, LA
River Birch-Willswood	Vic Culpepper	Office: 504-436-1288 Cell: 504-915-6006 vculpepper@riverbirchlandfill.com	Avondale, LA
Willow Bend	Hensley Lee	Office: 601-799-1335 Cell: 601-273-0404 hrlee81@hotmail.com	St. John the Baptist Parish, LA
Pearlington Dirt, Phase 2	Johnny Dollar	Cell: 318-366-8218 jdollar.chapel.hill@gmail.com	Pearlington, MS
*Gathien – Navy Ship	Paul Loupe	Office: 985-535-0148 Paul.Loupe@loupegroup.com	St. Bernard Parish
River Birch-South Kenner Rd.	Vic Culpepper	Office: 504-436-1288 Cell: 504-915-6006 vculpepper@riverbirchlandfill.com	Avondale, LA

Guillot	Paul Loupe	Office: 985-535-0148 Paul.Loupe@loupegroup.com	St. Bernard Parish
Eastover, Phase 2	Jerry Howell Evenstar, Inc.	Cell: 504-559-1606 jerryhowell992@hotmail.com	New Orleans, LA
Willow Bend, Phase 2	Hensley Lee	Office: 601-799-1335 Cell: 601-273-0404 hrlee81@hotmail.com	St. John the Baptist Parish, LA
Tammany Holding Company	Robert Torres	Office: 985-641-0089	St. Tammany Parish, LA
Henley	Robert Najor	Office: 251-867-9972 najorr@bellsouth.net	Hancock County, MS
Big Shake	Jay Thomas	Office: 225-769-8615 laearthcorps@cox.net	St. James Parish, LA
Contreras Cells E, F, & Z	Terry Lovelace	Office: 601-922-9355 Cell: 601-955-7795 tlovelace@uci-ms.com	St. Bernard Parish, LA
3C Riverside Properties, Phase 3	H. Ray Coleman	Office: 901-309-5844 raycoleman@earthlink.net	St. Charles Parish, LA
Bocage Plantation	Marion Rundell	Cell: 719-253-1700 mrundell@gmail.com	Ascension Parish, LA
Idlewild, Stage 1	Jerry Howell Evenstar, Inc.	Cell: 504-559-1606 jerryhowell992@hotmail.com	Plaquemines Parish, LA
Plaquemines Dirt & Clay	Karen Boudrie	Office: 504-912-5696 boudriekaren@yahoo.com	Plaquemines Parish, LA
Citrus Lands	Edwin Blair	Office: 504-656-2181	Plaquemines Parish, LA
ConocoPhillips	Emily Campbell	Office: 504-656-3103 Cell: 504-415-3568	Plaquemines Parish, LA
Nairn	Jerry Howell Evenstar, Inc.	Cell: 504-559-1606 jerryhowell992@hotmail.com	Plaquemines Parish, LA

*No salinity data obtained as Right of Entry not provided

(b) Clay may be furnished from any of the above listed sources, or at the option of the Contractor may be furnished from any other source designated by the Contractor and accepted by the Contracting Officer, subject to the conditions in 31 23 00.00 12, paragraph entitled CONTRACTOR-FURNISHED BORROW AREAS.

(c) The Government is not responsible for any agreements or breach of agreements nor the resulting impacts of any breach of agreements between the Contractor and the listed owners and/or agents and or any other persons.

(d) Contact the Point of Contact for the above sources for information regarding the location of the sites and geotechnical boring logs of the material.

(e) Usage of any of the above listed clay sources shall neither relieve the Contractor from its obligation to furnish satisfactory material to the project nor commit the Government to the acceptance of the character, quantity or availability of material from these sources. Verification of the material should be performed by the Contractor to assure that the material meets the contract specifications for embankment construction material.

14. PHASE CONSTRUCTION

Levee Construction Phasing

Phase 1 – The Contractor shall complete all required work between C/L Stations 119+74 (+/-) – 182+15 within 200 days of notice to proceed.

Phase 2 – The Contractor shall complete all required work between C/L Stations 55+05 – 60+51 at any time during the contract period except 15 August thru 15 October (Core Hurricane Season).

Phase 3 – (Option Area – A), If implemented by the Contracting Officer Representative all required work between C/L Stations 181+65 – 185+90.21 may be constructed by the Contractor at any time during the contract period except 15 August thru 15 October (Core Hurricane Season).

Phase 4 – The Contractor shall complete all remaining required work at any time during the contract period.

Westminster Pump Station Floodwall Construction Phasing

Phase 1 – Place soil reinforcement geotextile, settlement geotextile and place Tie-in embankment.

Phase 2 - Wait six (6) months for soil consolidation.

Phase 3 – Excavate, drive piles, construct T-Walls and I-Walls.

Phase 4 – Place concrete scour protection.

15. COMMERCIAL WARRANTY

The Contractor agrees that the standard commercial equipment furnished under this contract shall be covered by the most favorable commercial warranties the manufacturer gives to any customer for such equipment, and that the remedies provided herein are in addition to and do not limit any rights afforded to the Government by any other clause of this contract. Two copies of the warranties shall be furnished by the Contractor to the Contracting Officer.

16. ACCESS PLAN

The Contractor shall submit an access plan to be reviewed and approved by the Contracting Officer to include, as a minimum, the following:

(a) Layout drawings showing the location of all equipment, office structures, toilets, and storage areas for materials.

(b) Show mobilization and demobilization routing and locations of large equipment, such as bulldozers, excavators, etc. while on the jobsite.

17. FORMAT OF SURVEYS

The Contractor shall submit final borrow pit and levee surveys upon completion of all construction activities. All surveys shall be in USACE EM Format as described in the "USACE New Orleans District Guide for Minimum Survey Standards". This document can be found at the following location: http://www.mvn.usace.army.mil/ed/edss/USACE_MVN_Min_Survey_Standards.PDF. Each surveyed point should be listed on a separate line as a comma-delimited list of the following:

(1) Point_id, northing, easting, elevation, code

(2) Surveyed points that are part of a profile shall be grouped under the appropriate #P01 record for that profile.

(3) Surveyed points that are part of a cross-section shall be grouped under the appropriate #X01 record for that cross-section.

(4) All other points shall be grouped under the appropriate #M01 record.

The code value shall be one of the three letter codes listed in Appendix 2 of "USACE New Orleans District Guide for Minimum Survey Standards". If a surveyed point is not one of the items listed in Appendix 2, the Contractor should submit a CODES.DAT file containing a semi-colon delimited list of these unique survey codes. Each reference benchmark should be included as #V/#T records with the surveyed elevation #V/T06, and vertical datum and epoch information. The point of contact for survey information is Dwayne Blanchard at 504.862.1589. A sample EM Format file is attached.

18. PROJECT BENCHMARKS

a. Benchmark Verification. To ensure local/internal consistency, the Contractor shall verify all project benchmarks to 3rd order loop-closure standards. If this accuracy cannot be achieved, the project bench marks shall be re-tied to the National Spatial Reference System (NSRS). Ties between the project control and the local survey control shall be taken at the beginning and ending of field data collection activities or every 6 months, whichever is less. This applies to all surveys, including prior to actual construction layout, during construction, post-construction or as-built surveys, and engineering surveys. Field records of these survey verifications shall be delivered in a survey report, which shall be updated with each periodic verification.

b. Records. Field records of these benchmark verifications shall be uploaded by the Contractor to the USACE ftp site:

ftp://ftp.usace.army.mil/pub/mvn/ComplianceSurveys/ after each verification has been completed. The Contracting Officer's Representative shall be notified when the verifications are complete and uploaded to the USACE ftp site. The Contracting Officer's Representative shall be notified immediately if any errors or inconsistencies in the benchmark verifications are found.

19. FIELD VERIFICATION OF UTILITY LOCATIONS

Documentation on the exact locations of various underground utilities is not available except as shown in the reference drawings. In particular, the exact locations of water service and septic system field lines are not precisely known. The Contractor shall verify the locations of underground utilities prior to digging for any purpose.

20. U.S ARMY CORPS OF ENGINEERS CRD-C STANDARDS

CRD-C standards can be found at the following case sensitive address: www.wes.army.mil/SL/MTC/handbook/handbook.htm.

21. PAYMENT FOR MATERIALS STORED OFFSITE

Pursuant to the Contract Clause in Section 00700 entitled "Payments Under Fixed Price Construction Contracts (FAR 52.232-5)", materials delivered to the Contractor at locations other then the site of the work may be taken into consideration in making progress payments if included in invoices for payment estimates and if all the conditions of the Contract Clauses are fulfilled. Payment for items delivered to locations other than the work site shall be limited to materials which have been approved (if required by the Technical Specifications) and fabricated to the point where they are identifiable to an item of work required under the Contract. Such payment shall be made only after receipt of paid or receipted invoices or invoices with canceled check showing title to the items by the prime contractor. These invoices must show the dollar value of the materials and labor incorporated into them. The delivery size shall be acceptable to the Government and the materials shall be available for inspection by the Government prior to any consideration for payment. Payment for materials delivered offsite is limited to Steel H-piles.

22. STAGING

Staging will be permitted within the staging areas shown on the Contract Drawings. No sidewalk, private property, or property adjacent to the jobsite will be allowed for storage of equipment or materials without written, legal, prior approval from the property owner. A copy of all agreements between the Contractor and property owners shall be forwarded to the Contracting Officer. The Contractor shall maintain the project site free of debris, plant overgrowth, unnecessary equipment or materials.

23. RIGHT-OF-WAY RESTRICTIONS

Due to the proximity of ongoing and future contracts at Westwego #2 and Westminster Pumping Stations restrictions may apply to the rights-of-way in those areas. For the construction of the T-Walls, the Contractor shall be allowed light vehicle (passenger car/ pick-up trucks) access to the existing climber screen bridge at Westminster Pump Station at the discretion of the Contracting Officer and the Pump Station Operator as to not infer with climber screen installation and operation. Equipment used for the construction of the levee reaches will not be allowed access to the climber screen bridge. The Contracting Officer will determine as to when full access and rights to those areas are given.

24. VIDEOTAPE AND PHOTOGRAPHIC DOCUMENTATION

The pre-construction and post-construction conditions of permanent roads, streets, driveways, sidewalks, above-ground utilities, and existing structures shall be verified and documented by the use of Contractor-furnished photographs and videotapes. Videotapes shall be VHS format or digital format (DVD) with voice over commentary describing all pertinent or unusual conditions. Video shall have a stamped date. Photographs shall be 35 mm or digital, color, and 4 inch x 6 inch size minimum, and shall have stamped date. The Contractor shall provide two (2) copies of the videotape or DVD and two (2) copies of photos with negatives or CDs containing files to the Contracting Officer for the Contract file. Electronic photos shall be accompanied by a log describing the content of each photo. Two (2) hard copies shall be assembled in a report form with a cover letter attached. In the report, a description of each picture identifying and describing the location and indicating the date of the photograph shall be typed beneath each picture. On the reverse of each photograph, the Contractor shall affix a self-adhesive label on the reverse of each picture that shall identify the location, describe the photographed object and indicate the date of the photograph and name of the person who documents the information. All the information on the label shall be typewritten in black. Additionally, the name shall also be signed. The Contractor shall coordinate so that representatives of the Contracting Officer are present during the pre- and post-construction documentation. There will no measurement videotape and photographic documentation. Payment for videotape and photographic documentation will be made at the contract lump sum price for “Videotape and Photographic Documentation”. Price and Payment shall constitute full compensation for all plant, labor, equipment and materials to complete the work as specified herein.

25. EXISTING FACILITIES

a. Protection and Relocation of Existing Structures and Utilities. The Contractor shall assume full responsibility for the protection of all structures and utilities, public or private, including poles, signs, services to building utilities, in the street, gas pipes, water pipes, hydrants, sewers, drains, and electric and telephone

cables, whether or not they are shown on the drawings. The Contractor shall carefully support and protect all such structures and utilities from injury of any kind. Any damage resulting from the Contractor's negligence shall be repaired by him at his expense. (See related General Provision entitled "DAMAGED STRUCTURES AND ROADWAYS" below).

b. The Contractor shall bear full responsibility for locating all underground structures and utilities (including existing water services, drain lines, and sewers) as indicated on the plan drawings. Services to buildings shall be maintained, and all costs or charges resulting from damage thereto shall be paid by the Contractor. Documentation on the exact locations of various underground utilities is not available. In particular, the exact locations of water service, water lines, septic system field lines, fuel lines and street lights at the Project Site are not precisely known. The Contractor shall verify the locations of all underground utilities prior to digging by calling LOUISIANA 1 CALL.

c. If, in the opinion of the Contracting Officer, permanent relocation of a utility owned by the Parish is required and is not indicated on the plans, he may direct the Contractor in writing, to perform the work. Work so ordered will be paid for by an equitable adjustment under the Contract Clause in Section 00700, entitled "Changes (FAR 52.243-4)". If relocation of a privately owned utility is required, the Contractor shall notify the utility owner and shall have no claim for delays due to such relocation.

d. Care and Protection of Property. The Contractor shall be responsible for the preservation of all public and private property, and shall use every precaution necessary to prevent damage thereto. If any direct or indirect damage is done to public or private property by or on account of any act, omission, neglect, or misconduct in the execution of the work on the part of the Contractor, such property shall be restored by the Contractor, at his expense, to a condition similar or equal to that existing before the damage was done, or he shall make good the damage in another manner acceptable to the Contracting Officer.

e. Sidewalks and Curbs. All sidewalks which are disturbed by the Contractor's operations shall be restored to their original or better condition by the use of similar or comparable materials. All curbing shall be restored in a condition equal to the original construction and in accordance with the current Federal (American Disability Act - ADA), State and local code requirements.

f. Other Features. Along the location of this work, all fences, walks, bushes, trees, shrubbery, and other physical features to remain, shall be protected and restored in a thoroughly workmanlike manner.

g. The protection, removal, and replacement of existing physical features along the line of work shall be a part of the work under the Contract, and all costs in

connection therewith shall be included in the applicable contract unit and/or lump sum prices for which the work is incidental thereto.

h. Water for Construction Purposes. In locations where public water supply is available, the Contractor may purchase water for all construction purposes. The express approval of the Water Department of the Parish shall be obtained in writing. Hydrants shall only be operated under the supervision of the Water Department personnel of the Parish.

i. Maintenance of Flow. The Contractor shall at his own cost, maintain the flow of existing sewers, drains, and water courses, including drain pipes and overland flow scheduled to be modified, within the project limits during the progress of the work, and shall immediately cart away and remove all offensive matter. The Contractor shall submit his drainage plan, in accordance with Section 01 33 00 SUBMITTAL PROCEDURES depicting how the existing overland flow will be maintained during construction. Services to buildings shall be maintained and all costs or charges resulting from damage there to shall be paid by the Contractor.

26. DAMAGED STRUCTURES AND ROADWAYS

The Contractor shall at his own expense remove and replace any damaged structures, including safety fences, and roadways caused by the negligence of his construction work as directed by the Contracting Officer. The Contractor shall coordinate the work with the Contracting Officer's Representative.

27. COORDINATION OF WORK

The Contractor shall coordinate use of the access roads with other contractors to avoid any delays or disruptions to his on-going operations. In case of difficulty in obtaining cooperation from the other contractors working in the vicinity of this project, it shall be brought to the immediate attention of the Contracting Officer. It is anticipated that other contractors will be working on the Westwego #2 and Westminter Pumping Station fronting protection projects, the Westwego #2 diesel generator installation, and the Westminster Pump Station climber screen installation.

28. CONE PENETROMETER TEST RESULTS

Test results for the Cone Penetrometers (CPT’s) are attached at the end of this section. The field locations for the CPT’s are indicated in the drawings

Below are two samples of the construction project identification sign showing how this panel is adaptable for use to identify either military (top), or civil works projects (bottom). The graphic format for this 4′ x 6′ sign panel follows the legend guidelines and layout as specified below. The large 4′ x 4′ section of the panel on the right is to be white with black legend. The 2′ x 4′ section of the sign on the left with the full Corps signature (reverse version) is to be screen printed Communications Red on the white background.

This sign is to be placed with the Safety Performance Sign shown on the following page. Mounting and fabrication details are provided on page 16.4.

Special applications or situations not covered in these guidelines should be referred to the District/Division sign coordinator.

Legend Group 1: One- to two-line description of Corps relationship to project.
Color: White
Typeface: 1.25″ Helvetica Regular
Maximum line length: 19″

Legend Group 2: Division or District Name (optional). Placed below 10.5″ Reverse Signature (6″ Castle).
Color: White
Typeface: 1.25″ Helvetica Regular

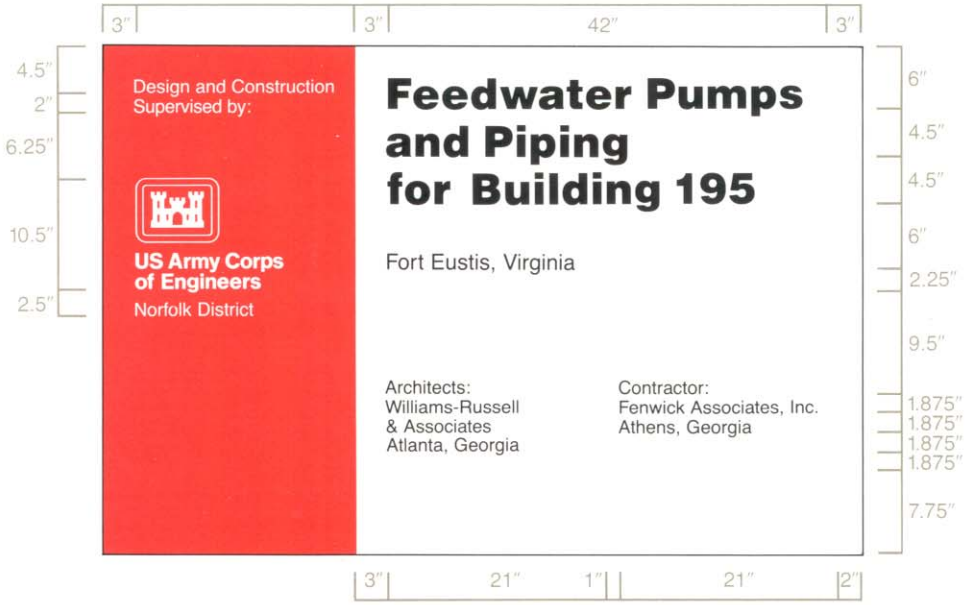
Legend Group 3: One- to three-line project title legend describes the work being done under this contract.
Color: Black
Typeface: 3″ Helvetica Bold
Maximum line length: 42″

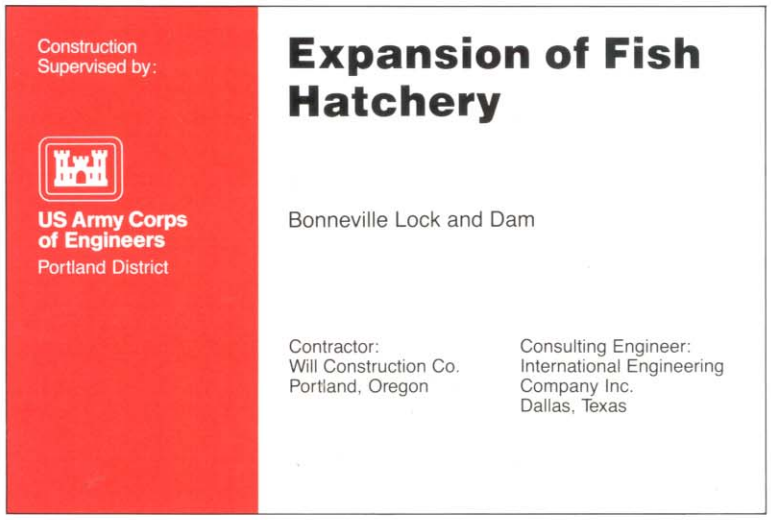
Legend Group 4: One- to two-line identification of project or facility (civil works) or name of sponsoring department (military).
Color: Black
Typeface: 1.5″ Helvetica Regular
Maximum line length: 42″

Cross-align the first line of Legend Group 4 with the first line of the Corps Signature (US Army Corps) as shown.

Legend Groups 5a-b: One- to five-line identification of prime contractors including: type (architect, general contractor, etc.), corporate or firm name, city, state. Use of Legend Group 5 is optional.
Color: Black
Typeface: 1.25″ Helvetica Regular
Maximum line length: 21″

All typography is flush left and rag right, upper and lower case with initial capitals only as shown. Letter- and word-spacing to follow Corps standards as specified in Appendix D.





Sign Type	Legend Size	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
CID-01	various	4″ x 6″	4″ x 4″	HDO-3	48″	WH-RD/BK

Each contractor's safety record is to be posted on Corps managed or supervised construction projectgs and mounted with the construction project identification sign specified on page 16.2.

The graphic format, color, size and typefaces used on the sign are to be reproduced exactly as specified below. The title with First Aid logo in the top section of the sign, and the performance record captions are standard for all signs of this type. Legend Groups 2 and 3 below identify the project and the contractor and are to be placed on the sign as shown.

Safety record numbers are mounted on individual metal plates and are screw-mounted to the background to allow for daily revisions to posted safety performance record.

Special applications or situations not covered in these guidelines should be referred to the District/Division sign coordinator.

Legend Group 1: Standard two-line title "Safety is a Job Requirement", with (8" od.) Safety Green First Aid logo. Color: To match PMS 347
Typeface: 3" Helvetica Bold
Color: Black

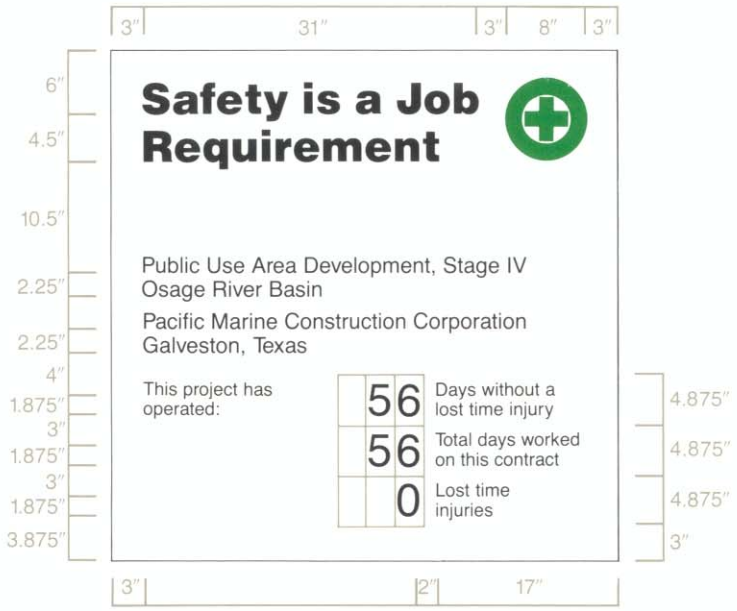
Legend Group 2: One- to two-line project title legend describes the work being done under this contract and name of host project.
Color: Black
Typeface: 1.5" Helvetica Regular
Maximum line length: 42"

Legend Group 3: One- to two-line identification: name of prime contractor and city, state address.
Color: Black
Typeface: 1.5" Helvetica Regular
Maximum line length: 42"

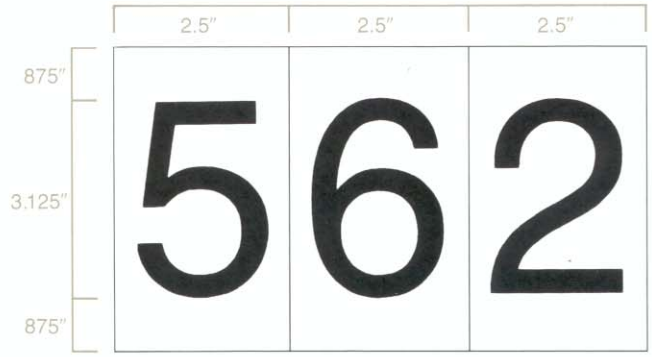
Legend Group 4: Standard safety record captions as shown.
Color: Black
Typeface: 1.25" Helvetica Regular

Replaceable numbers are to be mounted on white .060 aluminum plates and screw-mounted to background.
Color: Black
Typeface: 3" Helvetica Regular
Plate size: 2.5" x .5"

All typography is flush left and rag right, upper and lower case with initial capitals only as shown. Letter- and word-spacing to follow Corps standards as specified in Appendix D.



Sign Type	Legend Size	Panel Size	Post Size	Specification Code	Mounting Height	Color Bkg/Lgd
CID-02	various	4" x 4"	4" x 4"	HDO-3	48"	WH/BK-GR



All Construction Project Identification signs and Safety Performance signs are to be fabricated and installed as described below. The signs are to be erected at a location designated by the contracting officer and shall conform to the size, format, and typographic standards shown on pages 16.2-3. Detailed specifications for HDO plywood panel preparation are provided in Appendix B.

Shown below the mounting diagram is a panel layout grid with spaces provided for project information. Photocopy this page and use as a worksheet when preparing sign legend orders.

For additional information on the proper method to prepare sign panel graphics, contact the District sign coordinator.

The sign panels are to be fabricated from .75″ High Density Overlay Plywood. Panel preparation to follow HDO specifications provided in Appendix B.

Sign graphics to be prepared on a white non-reflective vinyl film with positionable adhesive backing.

All graphics except for the Communications Red background with Corps signature on the project sign are to be die-cut or computer-cut non-reflective vinyl, pre-spaced legends prepared in the sizes and typefaces specified and applied to the background panel following the graphic formats shown on pages 16.2-3.

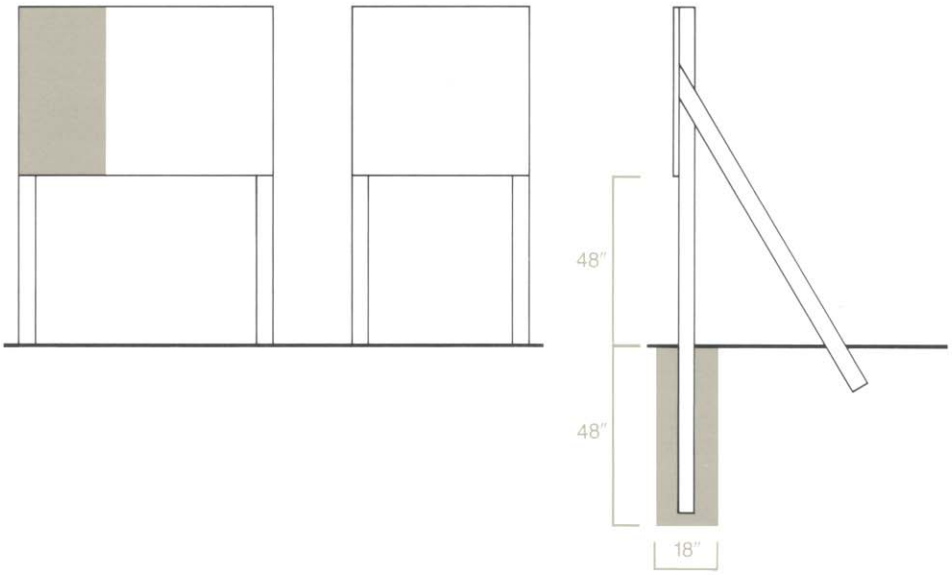
The 2′ x 4′ Communications Red panel (to match PMS-032) with full Corps signature (reverse version) is to be screen printed on the white background. Identification of the District or Division may be applied under the signature with white cut vinyl letters prepared to Corps standards. Large scale reproduction artwork for the signature is provided on page 4.8 (photographically enlarge from 6.875″ to 10.5″).

Drill and insert six (6) .375″ T-nuts from the front face of the HDO sign panel. Position holes as shown. Flange of T-nut to be flush with sign face.

Apply graphic panel to prepared HDO plywood panel following manufacturers' instructions.

Sign uprights to be structural grade 4″ x 4″ treated Douglas Fir or Southern Yellow Pine, No.1 or better. Post to be 12′ long. Drill six (6) .375″ mounting holes in uprights to align with T-nuts in sign panel. Countersink (.5″) back of hole to accept socket head cap screw (4″ x .375″).

Assemble sign panel and uprights. Imbed assembled sign panel and uprights in 4′ hole. Local soil conditions and/or wind loading may require bolting additional 2″ x 4″ struts on inside face of uprights to reinforce installation as shown.



Construction Project Sign
Legend Group 1: Corps Relationship

1. _____
2. _____

Legend Group 2: Division/District Name

1. _____
2. _____

Legend Group 3: Project Title

1. _____
2. _____
3. _____

Legend Group 4: Facility Name

1. _____
2. _____

Legend Group 5a: Contractor/A&E

1. _____
2. _____
3. _____
4. _____
5. _____

Legend Group 5b: Contractor/A&E

1. _____
2. _____
3. _____
4. _____
5. _____

Safety Performance Sign
Legend Group 1: Project Title

1. _____
2. _____

Legend Group 2: Contractor/A&E

1. _____
2. _____

Construction
Supervised by:

US Army Corps of Engineers

New Orleans District

Lake Pontchartrain, LA, and Vicinity Hurricane Protection High Level Plan

Gap Closures at Pump Station #3, Interim Protection Plan, Phase 1 Jefferson Parish, Louisiana

Contractor:
U.D.H. Builders, Inc.
Baton Rouge, Louisiana
(Do not show physical address)

Example

3” | 31” | 3” | 8” | 3”

6” | 4.5” | 10.5” | 2.25” | 3” | 2.25” | 3” | 4.875” | 4.875” | 5”

Safety is a Job Requirement

Gap Closures at Pump Station #3,
Interim Protection Plan, Phase 1

U.D.H. Builders, Inc.
Baton Rouge, Louisiana

Example

This project started	3	5	04
Date since last Lost time accident			
Total lost time injuries			0

4.875” | 4.875” | 4.5” | 3”

3” | 21” | 24”

.75” | 3” | .75”

5 | 0 | 4

2.5” | 1.25” | 2.5” | 2.5”

(NOT TO SCALE)

ACCIDENT PREVENTION PROGRAM
ADMINISTRATIVE PLAN

(EM385-1-1 (Aug 05) Pages 3,4 & App A)

Accepted copy must be at work site!

1. Contractor	2. Contract Name & No.		3. Date
4. Project Superintendent	5. Shift/day	5a. Hours/shift	5b. Maximum employees/shift
5c. Describe major scope of work and location:			
6a. Training - List subjects to be discussed with employees in safety indoctrination.			
6b. TRAINING - List mandatory training and certifications that are applicable to this project (e.g., explosive actuated tools, confined space entry, crane operator, diver, vehicle operator, boat captains etc. (List the SSHO and attached a copy of OSHO training Certification)			
6c. List major equipment i.e. cranes, dozers, vessels etc.			
6d. List special equipment i.e. radioactive equipment (Moisture Density Gage) etc.			
7. Responsibility & Authority - Who is responsible for safety? Project: Corporate: Line of Authority?			
8. Who will conduct safety inspection?	8a. How?		8b. When?
9a. Is safety & health policy attached?	9b. Is safety program attached?		9c. Day & hour weekly safety meeting to be held:
10. How will subcontractor & supplies be controlled?	11. What are their safety responsibilities?		

ACCIDENT PREVENTION PROGRAM
ADMINISTRATIVE PLAN

(EM385-1-1 (Aug 05) Pages 3,4 & App A)
Accepted copy must be at work site!

12. Who will report accidents, exposure data?
13. MEDICAL SUPPORT. Outline on-site medical support and off-site medical arrangements:

14. Outline procedures for conducting hazard assessments & written certification of PPE	Who?	When?	How?

15. Names of first aid attendants having certificates	Type of certificate & expiration date	Names of USCG licensed boat operators. Type licence & expiration date.

ACCIDENT PREVENTION PROGRAM
ADMINISTRATIVE PLAN

(EM385-1-1 (Aug 05) Pages 3,4 & App A)
Accepted copy must be at work site!

Proposed layout of temporary buildings and facilities (including subcontractors) and traffic patterns including access roads, haul roads, R.R.s. utilities, etc.

The _____ will pursue a positive program of training, inspections
(Company)
and hazard control throughout the term of this contract. Mr./Ms. _____ has

responsibility and authority for enforcing them.

_____ _____ _____
Contractor's Signature Date C.O.R. Signature and Date

ACCIDENT PREVENTION PLAN CHECKLIST
USACE NEW ORLEANS DISTRICT

CONTRACT NO. _____

1- MVN Form 385-43 Accident Prevention Program, Administrative Plan _____

2- MVN Form 385-43(1) Accident Prevention Plan Checklist _____

3- MVN Form 385-43(2) Accident Prevention Program, Hazard Analysis _____

4- Company's Safety Policy Letter _____

5- MVN Form 385-10 Fuel Oil Transfer _____

6- First Aid Card Holders _____

7- CPR Card Holders _____

8- Seaworthiness Certificates _____

9- Hurricane Plan _____

10- Substance Abuse Policy Program _____

11- Lockout/Tagout Program _____

12- Plan of Operation _____

13-12-Hour Shift Waiver _____

14- Trained Personnel Authorized to Operate Equipment (Explain Training) _____

15- Crane Certification, Crane/Derrick and Dragline Operator's Certification _____

16- Physical Qualifications (yearly) for Crane/Derrick and Dragline Operators _____

17- Hazardous Chemical Communication Program _____

18- Confined Space _____

19- Dive Plan _____

20- Nuclear Density Meter Certification _____

21-Health Plan (reviewed by competent person (Industrial Hygienist) i.e. painting, blasting, working with creosote timbers, etc _____

22-Safety Plan for loading and dumping of trucks _____

23-Has the Site Safety and Health Officer been designated and has the OSHA training _____

Remarks: X= OMISSIONS FROM PLAN – SUBMIT

_____

_____

Signature:_____
Safety Specialist Date

ACCIDENT PREVENTION PLAN CHECKLIST
ADMINISTRATIVE SECTION
(Forms must be submitted (7) days prior to start date for reviewing)

LOCATION:	**DATE:**
CONTRACT:	**SIGNATURE:**

Please check and submit copies of the following items that are applicable. (See EM385-1-1 (Nov 03) Paragraph 01.A.09 and App A)	**YES**	**NO**	**Location in Plan**
1. Statement of safety and health policy			
2. Identification & accountability of personnel responsible for accident prevention			
3. Means for coordinating and controlling work activities of contractors, subcontractors, and suppliers.			
4. Responsibilities of subcontractors in effecting the requirements of the accident prevention plan			
5. Plans for safety indoctrination and continued safety training			
6. Provisions for frequent safety inspections of work sites, material, & equipment to ensure compliance with accident prevention plan and safety manual			
7. Means of recording (in inspection reports) identified safety and health deficiencies.			
8. Measures, timetable and individual responsible for correction of deficiencies listed above.			
9. Procedures for follow-up inspections to ensure correction of deficiencies			
10. Responsibility for investigating and reporting accidents; reporting exposure			
11. Responsibility for maintaining accident and exposure data, reports, and logs			
12. Emergency response capabilities to minimize the consequences of accidents or natural disaster			
13. Contingency plans for severe weather, e.g., windstorms, flooding, tornadoes, marine storms, etc.			
14. Plans for maintaining job cleanup and safe access			
15. Public safety requirements (e.g., fencing, signs)			
16. Local requirements which must be addressed			
17. Prevention of alcohol and drug abuse on the job			
18. Plans for a hazard communication program			
19. Written program for the control of hazardous energy (Lockout/Tagout)			
20. Dive plans submitted to safety.			
21. List of trained/designated equipment operators.			
22. Copy of annual crane/derrick certification and a list of licensed crane operators.			
23. Written safety plans for the pit and dumping areas.			
24. Health Submittals (must be reviewed and signed by contractor's Industrial Hygienist or Occupational Health Physician before submittal)			

25. Has the contractor designated a SSHO officer and provided proof that the site safety and health officer has completed the 10 hr OSHA 600 class or equivalent? See our new safety manual, EM385-1-1 revised November 2003, page 10 paragraph 1.A.17. Yes ( ) No ( )

ACCIDENT PREVENTION PROGRAM
CONTRACTOR ACTIVITY HAZARD ANALYSIS

1. Contract No.	2. Contract Name	3. Contract Administrator:
4. Date	5. Location	6. Estimated Start Date
7. PRINCIPAL STEPS	8. POTENTIAL HAZARDS	9. RECOMMENDED CONTROLS
10. EQUIPMENT TO BE USED	11. INSPECTION REQUIREMENTS	12. TRAINING REQUIREMENTS
Contractor/Superintendent or Safety Officer (Signature & Date)	Contractor/Project Manager Or Representative (Signature & Date)	

INSTRUCTIONS FOR COMPLETION OF CEMVN Form 385-43/2	
Item Number	Instructions
1.	Self-explanatory
2.	Self-explanatory
3.	The Area, Resident, Project, or Field Office administering the contract.
4.	Date Hazard Analysis is prepared.
5.	Location of contract or where activity is to be performed.
6.	Estimated start date of the activity being analyzed.
7.	The principal steps of the operation must be identified in sequential order.
8.	Analyze each principal step for potential hazards and identify here.
9.	Specify the controls to mitigate or minimize each potential hazard.
10.	All major pieces of equipment used in each step of the operation must be identified.
11.	List inspection requirements for the work activity and equipment.
12.	List specific training requirements, including hazard communication
13.	The Contract Superintendent or Safety Officer must sign and date analysis.
14.	Contractor/Project Manager must sign and date.

ACCIDENT PREVENTION PROGRAM

FUEL OIL TRANSFER -- FLOATING PLANT

U.S. Army Engineer District, New Orleans

EM 385-1-1 (Aug 05) Section 19.A.06 (g)

1) Contractor	2) Contract Name & Number	3) Date
4) Officer in Charge of Fuel Transfer	4a) Name of Vessel	4b) Fuel to be Transferred
5) Name of Vessel	5a) Names of Qualified Tankermen	5b) Type of Certification and expiration date

6) Name of Vessel	6a) Type of fill nozzle or connection on Vessel	6b) Location of fill pipes openings	6c) Location of vents openings

7) Type, number, and size of fire fighting equipment to be available during fuel transfer operations.

8) Sequential steps to be followed when taking on fuel.

_____	_____	_____	_____
Contractor's Signature	Date	C.O. or C.O.R. Signature	Date

RIGHT-OF-ENTRY
TO: U.S. ARMY CORPS OF ENGINEERS
OR ITS CONTRACTOR

UNITED STATES OF AMERICA
STATE OF LOUISIANA
PARISH OF JEFFERSON

BE IT KNOWN, that on this _____ day of _____, 200__;

I _____, a person of the full age of majority and residing at _____ declare that I have granted the U.S. Army Corps of Engineers or its representative the right to enter into my yard, front or back, at the above address, for the purpose of monitoring nearby construction of drainage works, including but not limited to, at the nearest structure (e.g. pool, garage, or house) on my property to the construction site. This right of entry is valid for 12 months from the date listed above.

I understand that the person conducting the monitoring may place a brief case size piece of equipment on the ground when construction activities are taking place in the vicinity of my property. Also, a representative will attempt to notify me in advance of entering my yard.

Right of Entry Granted: ( ) **Right of Entry Declined: ( )**

BY: Signature _____ ( ) Owner / ( ) Lessee

Date: _____ Print Name_____

Sample

EM Format File

```
#H01 SAMPLE.EM
#H02 11/06/06
#H03 3
#H04 NAD83
#H05 07-002
#H06 FT
#H07 1702
#H08 PLAQUEMINES PARISH  LA
#H09 CHUSTZ SURVEYING INC.
#H12 1.0
#H13 PLAQUEMINES PARISH
#H14 NEW ORLEANS EAST SE  CHALMETTE SW  BERTRANDVILLE NE & NW
#H15 W912P8-06-D-0050
#H20 WEST BANK & VICINITY  ALGIERS CANAL HURRICANE PROTECTION
#H21 LEVEES  HERO TO BELLE CHASSE HWY (EAST SIDE) & BELLE CHASSE
#H22 HWY TO ALGIERS LOCK (WEST SIDE)
;
;
;-------------------VERTICAL CONTROL INFORMATION--------------------
;
;
#V01 BEL 1
#V02 -3.42
#V03 2004.65
#V04 NAVD88
#V05 GOOD
#V06 -3.42
#V07 494282.40,3697937.71
#V20 MONUMENT IS A 3/4" IRON ROD SET FLUSH WITH THE GROUND. IT IS
#V21 LOCATED 5.9 FT SE OF A RAILROAD IRON  25 FT NE OF ANOTHER
#V22 RAILROAD IRON  AND 116 FT EAST OF A GATE POST AT THE PUMP
#V23 STATION AREA.
#V24 PROJECT BENCHMARK POINTS ARE BEL1 AND V375 SEE
#V25 GPS REPORT FOR DETAILS.
;
;
#V01 770+58.11 (SETTLEMENT PLUG)
#V02 19.21
#V03 2004.65
#V04 NAVD88
#V05 GOOD
#V06 19.21
#V07 516940.13,3711674.20
#V20 MONUMENT IS A SETTLEMENT PLUG IN CONCRETE. IT IS LOCATED 9.4 FT
#V21 EAST NE OF THE EAST EDGE OF THE METAL STEPS  13.55 FT NE OF THE
#V22 EAST CORNER OF THE LOCK WALL  AND 17.3 FT NW OF THE NE CORNER
#V23 OF THE LOCK HOUSE.
;
;
;-------------------TEMPORARY BENCHMARK INFORMATION-----------------
;
;
#T01 TBM AC-1
#T02 7.96
#T05 GOOD
#T06 7.96
#T10 MONUMENT IS A STANDARD COE BRASS CAP RECESSED 0.5' BELOW GROUND
```

```
#T11 STAMPED "AC-1 07002C". IT IS LOCATED +/-500 FT. SW OF THE
#T12 CONCRETE BRIDGE OVER THE CANAL AT GENERAL DE GAULLE RD  69.3 FT
#T13 NW OF THE WATERS EDGE OF THE CANAL  17.6 FT NE OF THE SOUTHERN
#T14 GATE POST OF AN ENTRANCE GATE  AND 17.8 FT NE OF THR NORTHERN
#T15 MOST GATE POST.
;
;
#T01 TBM AC-2
#T02 8.50
#T05 GOOD
#T06 8.50
#T07 482914.44,3683055.07
#T10 MONUMENT IS A STANDARD COE BRASS CAP ON REBAR STAMPED "AC2
#T11 07002C". IT IS LOCATED 86.4 FT WNW OF THE AIRBASE FENCELINE
#T12 1.6 MILES SW OF THE PUMP STATION AT THE CROSSING  AND 0.17
#T13 MILES NE OF THE EDGE OF THE ASPHALT ROAD AT THE AIRBASE BOAT
#T14 RAMP.
;
;
#T01 TBM AC-3
#T02 8.86
#T05 GOOD
#T06 8.86
#T07 482917.55,3683035.15
#T10 MONUMENT IS A STANDARD COE BRASS CAP ON REBAR STAMPED "AC3
#T11 07002C". IT IS LOCATED 334 FT NW OF THE NORTHERNMOST GATE POST
#T12 ON THE ENTRANCE GATE TO THE LEVEE  336 FT NNW OF THE SOUTHERN
#T13 POST  0.2 MILES SE OF A POWER LINE CROSSING  AND 1 MILE SE OF
#T14 A CHAIN LINE FENCE GATE CROSSING THE LEVEE.
;
;
;
;
#H02 11/06/06
;
;
#H10 070003
#H11 53
;
;
;
;
;------------------------FIELD PERSONNEL---------------------------
;
#C01 J. GREMILLION
#C02 J. MASSE
#C03 K. MANUEL
#C03 S. HOLMES
;
;---------------------------EQUIPMENT-------------------------------
;
#E01 TOTAL STATION
#E02 46587793
#E03 TCR-305
;
#E01 LEICA
#E02 235668975
```

```
#E03 GT-3
;
;-----------------------------------------------------------------
;
#H02 11/02/06
;
;
#H10 070003
#H11 19
;
;
;-----------------------GAGE INFORMATION-------------------------
;
;
#G02 GAGE AC-3
#G03 0.50
#G04 12:55
#G07 483479.75,3683384.21
#G10 TEMPORARY STAKE GAGE SET AT AC-3
;
;
;---------------------- CROSS-SECTION -----------------------------
;
;
#X01 3700241.41  501025.16 3700687.38  500799.09 57090.00 570+90
#X03 10:53
#X04 0.80
20590,500960.30,3700343.72,-11.10,SND
20591,500954.99,3700362.88,-13.30,SND
20592,500948.11,3700381.50,-16.50,SND
20593,500942.69,3700401.47,-16.80,SND
20594,500934.73,3700420.93,-18.20,SND
20595,500927.26,3700438.51,-17.00,SND
20596,500916.38,3700455.22,-13.30,SND
20597,500907.08,3700473.36,-10.90,SND
20598,500899.57,3700491.79,-8.50,SND
20599,500892.12,3700510.12,-5.40,SND
20600,500882.66,3700528.07,-4.90,SND
20601,500872.68,3700545.22,-4.50,SND
20602,500862.95,3700562.58,-1.70,SND
20603,500854.68,3700581.17,-1.55,SND
20604,500847.27,3700599.48,-1.88,SND
20605,500838.98,3700617.69,-0.74,SND
20606,500830.68,3700635.90,0.40,SND
;
;----------------------- PROFILE ---------------------------------------
#P01
5552,494333.46,3697419.77,9.27,SHP
5553,494376.90,3697443.90,8.56,SHP
5554,494398.99,3697455.69,8.36,SHP
5555,494410.50,3697455.82,8.24,SHP
5556,494411.15,3697455.40,7.78,CLL
5557,494419.34,3697455.62,8.17,CLL
5558,494428.02,3697458.04,8.15,CLL
5559,494439.50,3697463.11,8.46,CLL
5560,494483.81,3697485.83,8.43,CLL
5561,494524.13,3697505.97,8.66,CLL
```

```
5562,494550.34,3697518.80,8.54,CLL
5563,494585.08,3697537.20,8.66,CLL
5564,494625.86,3697557.24,8.70,CLL
5565,494664.84,3697577.20,8.93,CLL
5566,494704.71,3697597.16,8.94,CLL
5567,494743.17,3697617.15,8.82,CLL
5568,494782.44,3697636.60,8.64,CLL
5569,494823.03,3697657.00,8.69,CLL
5570,494861.50,3697676.57,8.56,CLL
5571,494898.96,3697696.31,8.77,CLL
5572,494921.54,3697707.77,6.95,CLL
5573,494932.32,3697709.54,7.94,SHP
5574,494950.46,3697718.64,7.67,SHP
5575,494956.49,3697722.33,7.35,SHP
5576,494957.71,3697722.81,6.43,CLL
5577,494971.83,3697731.26,5.79,CLL
5578,494987.62,3697740.41,5.77,CLL
5579,495001.65,3697748.14,5.33,ESH
5580,495024.72,3697759.96,5.43,ESH
5581,495029.15,3697761.70,5.74,CLL
;
;--------------- MISC. SHOT POINTS ---------------------------
#M01 MISCELLANEOUS SHOTS TAKEN IN BETWEEN RANGES 312+00 AND 318+00
;
;
2807,482976.57,3682869.45,1.52,FL
2808,482905.77,3682933.86,4.69,FL
2809,482896.57,3682942.44,9.02,FL
2810,482885.94,3682951.60,8.64,FL
2811,482863.67,3682971.79,-0.26,FL
2812,482785.09,3683042.12,-2.88,FL
2813,482917.55,3683035.15,-0.89,RMP
2814,482931.41,3683036.73,1.15,RMP
2815,482952.25,3683037.10,4.61,RMP
2816,482977.95,3683039.14,8.61,RMP
2817,482998.08,3683041.58,9.32,RMP
2818,483030.60,3683049.20,7.53,RMP
2819,483056.35,3683056.21,4.64,RMP
2820,483051.39,3683065.63,5.47,RMP
2821,483033.83,3683062.95,7.85,RMP
2822,483020.70,3683060.67,9.36,RMP
2823,482995.31,3683055.36,9.26,RMP
2824,482970.99,3683049.58,7.08,RMP
2825,482951.69,3683049.63,4.06,RMP
2826,482914.44,3683055.07,-1.17,RMP
2827,483110.59,3683031.57,2.16,PIR
2828,483127.39,3683017.25,2.61,PIR
2829,483137.72,3683029.53,2.55,PIR
2830,483133.88,3683032.85,2.46,PIR
2831,483125.12,3683022.40,2.67,PIR
2832,483112.12,3683033.44,2.18,PIR
2833,483265.05,3683138.27,1.66,FL
2834,483195.48,3683208.46,5.46,FL
2835,483183.05,3683219.30,9.36,FL
2836,483172.83,3683229.40,9.28,FL
2837,483156.14,3683245.27,1.95,FL
2838,483069.19,3683323.97,-3.40,FL
```

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DIVISION 01 - GENERAL REQUIREMENTS

CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 GENERAL

1.1 MEASUREMENT AND PAYMENT
1.2 REFERENCES
1.3 SUBMITTALS
1.4 CONSTRUCTION SCHEDULE
1.4.1 NETWORK ANALYSIS SCHEDULE (NAS)
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-- End of Section Table of Contents --

SECTION 01 32 16.00 20

CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 GENERAL

1.1 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.

1.2 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. The following shall be submitted in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Construction schedule; G

1.4 CONSTRUCTION SCHEDULE

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. Submit within 10 calendar days after NTP for approval a construction schedule in the form of a Critical Path Method (CPM), Network Schedule in accordance with the terms in Contract Clause "FAR 52.236-15, Schedules for Construction Contracts," except as modified in this contract.

1.4.1 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.

1.4.2 CPM Submittals and Procedures

The Contractor shall load the schedule data into the Construction Contractor module of Resident Management System (RMS), as described in Specification Section 01 45 02.00 10 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.

1.4.3 UPDATED SCHEDULES

The Contractor shall update the construction schedule at monthly intervals or more frequently when revisions are required to the schedule and submit the revision to the Contracting Officer Representative for approval. The network analysis system shall be kept current, with changes made to reflect the actual progress status of the construction.

1.4.4 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.

1.4.5 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 and 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 will 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 input for the progress and their impact on the contract completion and total float.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

-- End of Section --

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DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01 33 00

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PART 2 PRODUCTS

PART 3 EXECUTION

-- End of Section Table of Contents --

SECTION 01 33 00

SUBMITTAL PROCEDURES

PART 1 GENERAL

1.1 MEASUREMENT AND PAYMENT

No separate measurement or payment will be made for submittal requirements as specified herein. Payment for the work covered under this section shall be distributed throughout the existing bid items. Payment for materials incorporated in the work will not be made if required approvals have not been obtained.

1.2 DEFINITIONS

1.2.1 Submittal Descriptions (SD)

Submittals requirements are specified in the technical sections. Submittals are identified by SD numbers and titles as follows.

SD-01 Preconstruction Submittals

Certificates of insurance.
Surety bonds.
List of proposed subcontractors.
List of proposed products.
Construction Progress Schedule.
Submittal register.
Schedule of prices.
Health and safety plan.
Work plan.
Quality control plan.
Environmental protection plan.
Truck wash down racks.

SD-02 Shop Drawings

Drawings, diagrams and schedules specifically prepared to illustrate some portion of the work.

Diagrams and instructions from a manufacturer or fabricator for use in producing the product and as aids to the Contractor for integrating the product or system into the project.

Drawings prepared by or for the Contractor to show how multiple systems and interdisciplinary work will be coordinated.

SD-03 Product Data

Catalog cuts, illustrations, schedules, diagrams, performance charts, instructions and brochures illustrating size, physical appearance and other characteristics of materials, systems or equipment for some portion of the work.

Samples of warranty language when the contract requires extended

product warranties.

SD-04 Samples

Fabricated or unfabricated physical examples of materials, equipment or workmanship that illustrate functional and aesthetic characteristics of a material or product and establish standards by which the work can be judged.

Color samples from the manufacturer's standard line (or custom color samples if specified) to be used in selecting or approving colors for the project.

Field samples and mock-ups constructed on the project site establish standards by which the ensuring work can be judged. Includes assemblies or portions of assemblies which are to be incorporated into the project and those which will be removed at conclusion of the work.

SD-05 Design Data

Design calculations, mix designs, analyses or other data pertaining to a part of work.

SD-06 Test Reports

Report signed by authorized official of testing laboratory that a material, product or system identical to the material, product or system to be provided has been tested in accord with specified requirements. (Testing must have been within three years of date of contract award for the project.)

Report which includes findings of a test required to be performed by the Contractor on an actual portion of the work or prototype prepared for the project before shipment to job site.

Report which includes finding of a test made at the job site or on sample taken from the job site, on portion of work during or after installation.

Investigation reports.

Daily logs and checklists.

Final acceptance test and operational test procedure.

SD-07 Certificates

Statements printed on the manufacturer's letterhead and signed by responsible officials of manufacturer of product, system or material attesting that product, system or material meets specification requirements. Must be dated after award of project contract and clearly name the project.

Document required of Contractor, or of a manufacturer, supplier, installer or subcontractor through Contractor, the purpose of which is to further quality of orderly progression of a portion of the work by documenting procedures, acceptability of methods or personnel qualifications.

Confined space entry permits.

Text of posted operating instructions.

SD-08 Manufacturer's Instructions

Preprinted material describing installation of a product, system or material, including special notices and Material Safety Data sheets concerning impedances, hazards and safety precautions.

1.2.2 Approving Authority

Office or designated person authorized to approve submittal.

1.2.3 Work

As used in this section, on- and off-site construction required by contract documents, including labor necessary to produce submittals, construction, materials, products, equipment, and systems incorporated or to be incorporated in such construction.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only or as otherwise designated. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Submittal register; G

1.4 SUBMITTAL CLASSIFICATION

Submittals are classified as follows:

1.4.1 Government Approved

Governmental approval is required for extensions of design, critical materials, deviations, equipment whose compatibility with the entire system must be checked, and other items as designated by the Contracting Officer. Within the terms of the Contract Clause in section 00700 entitled, Specifications And Drawings For Construction (FAR 52.236-21), they are considered to be "shop drawings." Any reference to Government approval by the Contracting Officer (CO) includes the approving authority of the CO, the Administrative Contracting Officer (ACO), or the Contracting Officer's representative (COR).

1.4.2 Information Only

All submittals not requiring Government approval will be for information only. They are not considered to be "shop drawings" within the terms of the Contract Clause referred to above.

1.5 APPROVED SUBMITTALS

The Contracting Officer's approval of submittals shall not be construed as

a complete check, but will indicate only that the general method of construction, materials, detailing and other information are satisfactory. Approval will not relieve the Contractor of the responsibility for any error which may exist, as the Contractor under the Contractor Quality Control (CQC) requirements of this contract is responsible for dimensions, the design of adequate connections and details, and the satisfactory construction of all work. After submittals have been approved by the Contracting Officer, no resubmittal for the purpose of substituting materials or equipment will be considered unless accompanied by an explanation of why a substitution is necessary.

1.6 DISAPPROVED SUBMITTALS

The Contractor shall respond to all concerns expressed by the Contracting Officer and promptly make any corrections necessary to address those concerns. The Contractor shall promptly furnish a corrected submittal in the form and number of copies specified for the initial submittal. If the Contractor considers any correction indicated on the submittals to constitute a change to the contract, a notice in accordance with the Contract Clause in Section 00700 entitled, Changes (FAR 52.243-4), shall be given promptly to the Contracting Officer.

1.7 GENERAL

The Contractor shall submit all items listed on the Submittal Register (ENG Form 4288) or specified in the other sections of these specifications. The Contractor shall make submittals as required by the specifications. The Contracting Officer may request submittals in addition to those specified when deemed necessary to adequately describe the work covered in the respective sections. Units of weights and measures used on all submittals shall be the same as those used in the contract drawings. Submittals shall be made in the respective number of copies and to the respective Area Office address listed in the Contract Clause in Section 00700, entitled Site Visit (Construction) (FAR 52.236-27). Each submittal shall be complete and in sufficient detail to allow ready determination of compliance with contract requirements. Prior to submittal, all items shall be checked and approved by the Contractor's Quality Control (CQC) representative and each item shall be stamped, signed, and dated by the CQC representative indicating action taken. Proposed deviations from the contract requirements shall be clearly identified. Submittals shall include items such as: Contractor's, manufacturer's, or fabricator's drawings; descriptive literature including (but not limited to) catalog cuts, diagrams, operating charts or curves; test reports; test cylinders; samples; O&M manuals (including parts list); certifications; warranties; and other such required submittals. Submittals requiring Government approval shall be scheduled and made prior to the acquisition of the material or equipment covered thereby. Samples remaining upon completion of the work shall be picked up and disposed of in accordance with manufacturer's Material Safety Data Sheets (MSDS) and in compliance with existing laws and regulations.

1.8 SUBMITTAL REGISTER

At the end of this section is a submittal register showing items of equipment and materials for which submittals are required by the specifications; this submittal register may not be all inclusive and additional submittals may be required. The Contractor shall maintain a submittal register for the project in accordance with Section 01 45 02.00 10 QUALITY CONTROL SYSTEM (QCS).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 track all submittals.

1.9 SCHEDULING

Submittals covering component items forming a system or items that are interrelated shall be scheduled to be coordinated and submitted concurrently. Certifications to be submitted with the pertinent drawings shall be so scheduled. Adequate time (a minimum of 30 calendar days exclusive of mailing time) shall be allowed and shown on the register for review and approval. No delay damages or time extensions will be allowed for time lost in late submittals.

1.10 TRANSMITTAL FORM (ENG FORM 4025)

The sample transmittal form (ENG Form 4025) attached to this section shall be used for submitting both Government approved and information only submittals in accordance with the instructions on the reverse side of the form. These forms are included in the QCS software that the Contractor is required to use for this contract. This form shall be properly completed by filling out all the heading blank spaces and identifying each item submitted. Special care shall be exercised to ensure proper listing of the specification paragraph and/or sheet number of the contract drawings pertinent to the data submitted for each item. In order to expedite review of submittals, an electronic copy of all submittals shall be sent to the Contracting Officer Representative along with the "Hard Copies". Electronic files shall be in Adobe Acrobat (PDF), Microstation (DGN), Autocad (DWG), MS Word, or other format acceptable to the Contracting Officer Representative.

1.11 SUBMITTAL PROCEDURES

Submittals shall be made as follows:

1.11.1 Procedures

Procedures for submittals will be stipulated by the Contracting Officer at the preconstruction conference.

1.11.2 Deviations

For submittals which include proposed deviations requested by the Contractor, the column "variation" of ENG Form 4025 shall be checked. The Contractor shall set forth in writing the reason for any deviations and annotate such deviations on the submittal. The Government reserves the right to rescind inadvertent approval of submittals containing unnoted deviations.

1.12 CONTROL OF SUBMITTALS

The Contractor shall carefully control his procurement operations to ensure that each individual submittal is made on or before the Contractor scheduled submittal date shown on the approved "Submittal Register."

1.13 GOVERNMENT APPROVED SUBMITTALS

Upon completion of review of submittals requiring Government approval, the submittals will be identified as having received approval by being so stamped and dated. Five (5) copies of the submittal will be retained by the Contracting Officer and 2 copies of the submittal will be returned to the Contractor.

1.14 INFORMATION ONLY SUBMITTALS

Normally submittals for information only will not be returned. Approval of the Contracting Officer is not required on information only submittals. The Government reserves the right to require the Contractor to resubmit any item found not to comply with the contract. This does not relieve the Contractor from the obligation to furnish material conforming to the plans and specifications; will not prevent the Contracting Officer from requiring removal and replacement of nonconforming material incorporated in the work; and does not relieve the Contractor of the requirement to furnish samples for testing by the Government laboratory or for check testing by the Government in those instances where the technical specifications so prescribe.

1.15 STAMPS

Stamps used by the Contractor on the submittal data to certify that the submittal meets contract requirements shall be similar to the following:

CONTRACTOR

(Firm Name)

_____ Approved

_____ Approved with corrections as noted on submittal data and/or attached sheets(s).

SIGNATURE: _____

TITLE: _____

DATE: _____

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

-- End of Section --

SUBMITTAL REGISTER

CONTRACT NO.
WBV-14C.2

TITLE AND LOCATION
New Westwego P.S. To Orleans Village

CONTRACTOR

ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAGRAPH #	CLASSIFICATION	GOVT OR A/E REVWR	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION			APPROVING AUTHORITY					REMARKS
							SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE OF ACTION	DATE FWD TO APPR AUTH/ DATE RCD FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE	DATE OF ACTION	MAILED TO CONTR/ DATE RCD FRM APPR AUTH	
(a)	(b)	(c)	(d)	(e)	(f)		(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		01 32 16.00 20	SD-01 Preconstruction Submittals															
			Construction schedule	1.4	G													
		01 33 00	SD-01 Preconstruction Submittals															
			Submittal register	1.7	G													
		01 57 23.01 12	SD-01 Preconstruction Submittals															
			Truck Wash-Down Rack	3.1	G													
		01 78 02.00 10	SD-02 Shop Drawings															
			As-Built Drawings	1.3.1	G	DO												
			SD-03 Product Data															
			Qualifications of CADD personnel	1.3.1.4	G	DO												
		02 41 00	SD-01 Preconstruction Submittals															
			Demolition Plan	1.7	G	RO												
			Notifications	1.5.1	G													
		03 11 14.00 12	SD-02 Shop Drawings															
			Shop Drawings	1.7														
			SD-03 Product Data															
			Materials	2.1														
			SD-05 Design Data															
			Formwork Not Supporting Weight	3.2.1	G	DO												
			of Concrete															
			SD-06 Test Reports															
			Inspection Reports	1.8.2														
		03 15 13.00 12	SD-02 Shop Drawings															
			Waterstops	3.1.3	G	RO												
			SD-03 Product Data															
			Preformed Expansion Joint Filler	2.1.1														

SUBMITTAL REGISTER

CONTRACT NO.
WBV-14C.2

TITLE AND LOCATION
New Westwego P.S. To Orleans Village

CONTRACTOR

ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAGRAPH #	CLASSIFICATION	GOVT OR A/E REVWR	CONTRACTOR: SCHEDULE DATES			CONTRACTOR ACTION			APPROVING AUTHORITY					REMARKS
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(a)	(b)	(c)	(d)	(e)	(f)		(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)
		03 15 13.00 12	Sealant	2.1.2.1														
			Waterstops	3.1.3														
			SD-04 Samples															
			Field-Molded	3.1.2														
			Non-metallic Material	2.3.2.2														
			SD-07 Certificates															
			Preformed Expansion Joint Filler	2.1.1														
			Sealant	2.1.2.1														
			Waterstops	3.1.3														
		03 21 00.00 12	SD-02 Shop Drawings															
			Fabrication and Placement	3.1														
			SD-03 Product Data															
			Butt-Splices	3.1.3	G	DO												
			Materials	2.1														
			SD-06 Test Reports															
			Material	1.5.1														
			Tests, Inspections, and	1.5.2														
			Verifications															
		03 31 00.00 12	SD-03 Product Data															
			Concrete Mixture Proportions	2.2	G	RO												
			Aggregates	1.6.1	G	RO												
			Aggregates	2.1.2	G	RO												
			Batch Plant	3.1.2														
			Concrete Mixers	3.1.3														
			Conveying Equipment and	3.1.4														
			Methods															

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TITLE AND LOCATION
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CONTRACTOR

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		03 31 00.00 12	Placing Equipment and Methods	3.3														
			Nonshrink Grout	2.1.6														
			SD-04 Samples															
			Surface Retarder	3.2.3.2														
			SD-05 Design Data															
			Construction Joint Treatment	3.2.3	G	RO												
			Curing and Protection	3.5	G	RO												
			Cold-Weather Placing	3.3.4	G	RO												
			Hot-Weather Placing	3.3.5	G	RO												
			SD-06 Test Reports															
			Testing and Inspection for	3.7.2	G	RO												
			Contractor Quality Control															
			Uniformity of Concrete Mixing	3.7.2.13														
			Tests and Inspections	3.7														
			SD-07 Certificates															
			Qualifications	3.7.1														
			Cementitious Materials	2.1.1	G	RO												
			Impervious-Sheet Curing	2.1.4.1														
			Materials															
			Air-Entraining Admixture	2.1.3.1														
			Other Chemical Admixtures	2.1.3.3														
			Membrane-Forming Curing	2.1.4.2														
			Compound															
			Latex Bonding Compound	2.1.7														
		05 50 03.00 12	SD-02 Shop Drawings															
			Shop Drawings	2.1.1	G	RO												

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		05 50 03.00 12	Schedule of Welding Procedures	3.2.1.3	G	RO												
			SD-03 Product Data															
			Materials	1.5.1														
			SD-07 Certificates															
			Certificates	3.2.1.4	G	RO												
		09 97 02.01 12	SD-03 Product Data															
			Safety and Health Provisions	1.6	G													
			Confined Spaces	1.6.5.1	G													
			Respirators	1.6.6.2	G													
			Certified Laboratory		G													
			Ventilation	1.6.5.1	G													
			Medical Status	1.7	G													
			PM-10 Monitoring	1.9.2.1	G													
			SD-04 Samples															
			Special Paint Formulas	2.1	G													
			Paint Formulations	2.2	G													
			Solvent and Thinners		G													
			SD-06 Test Reports															
			PM-10 Monitoring	1.9.2.1	G													
			Certified Laboratory		G													
			Inspection	3.4	G													
			SD-07 Certificates															
			Qualifications	1.4	G													
			Coating Thickness Gage	1.4.2	G													
			Qualification															
		31 05 19.04 12	SD-01 Preconstruction Submittals															

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		31 05 19.04 12	Work Plan	1.5.1														
			SD-04 Samples															
			Geotextile	1.5.1														
			SD-07 Certificates															
			Geotextile	1.5.1	G													
		31 05 19.05 12	SD-01 Preconstruction Submittals															
			Work Plan	1.3.1	G													
			SD-04 Samples															
			Geotextile	1.3.1	G ED-F													
			SD-06 Test Reports															
			Geotextile	1.3.1														
			SD-07 Certificates															
			Geotextile	1.3.1														
		31 41 16.00 12	SD-02 Shop Drawings															
			Shop Drawings	2.1.3	G RO													
			Substitute Sheet Piling	2.1.3	G RO													
			Submittals															
			SD-03 Product Data															
			Equipment Descriptions		G RO													
			SD-05 Design Data															
			Substitute Sheet Piling	2.1.3	G RO													
			Submittals															
			SD-06 Test Reports															
			Driving Records	1.9.1														
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			Materials Test Certificates	1.10														

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		31 62 16.00 12	SD-01 Preconstruction Submittals																
			Equipment Description	1.6	G	RO													
			SD-02 Shop Drawings																
			Shop Drawings	2.1	G	RO													
			SD-06 Test Reports																
			Driving Records	1.5.1															
			SD-07 Certificates																
			Material Tests	1.6															
		32 15 00.00 12	SD-06 Test Reports																
			Sampling and Testing	1.6.2	G														
		32 31 13	SD-02 Shop Drawings																
			Erection/Installation Drawings	1.5															
			Fence Assembly	1.5															
			Location of Gate, Corner, End,	3.18.1															
			and Pull Posts																
			Gate Assembly	1.5															
			Gate Hardware and Accessories	2.19															
			SD-03 Product Data																
			Fence Assembly	1.5															
			Gate Assembly	1.5															
			Gate Hardware and Accessories	2.19															
			SD-04 Samples																
			Fabric	2.3															
			Fabric	2.4															
			Fabric	3.9															
			Posts	2.5															

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		32 31 13	Braces	2.5														
			Line Posts	2.6														
			Sleeves	2.8														
			Top Rail	2.9														
			Tension Wire	2.13														
			Tension Wire	3.18.2														
			Barbed Wire	2.12														
			Barbed Wire Supporting Arms	2.5.1														
			Stretcher Bars	2.14														
			Gate Posts	2.17														
			Gate Hardware and Accessories	2.19														
			Padlocks	2.24														
			Wire Ties	2.21														
			SD-07 Certificates															
			Zinc Coating	1.7.1														
			Zinc Coating	2.2														
			Zinc Coating	2.13														
			Fabric	2.3														
			Fabric	2.4														
			Fabric	3.9														
			Barbed Wire	2.12														
			Stretcher Bars	2.14														
			Gate Hardware and Accessories	2.19														
			Concrete	2.22														
			Concrete	3.4														
			SD-08 Manufacturer's Instructions															

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		32 31 13	Fence Assembly	1.5														
			Gate Assembly	1.5														
			Hardware Assembly	1.5														
			Accessories	1.5														
			Accessories	1.5														
		32 92 19.04 12	SD-07 Certificates															
			Seed	2.1.3														
			Turf Establishment Plan	1.8	G													
		35 43 38.00 12	SD-01 Preconstruction Submittals															
			Concrete Mixture Proportions	1.6.3	G	RO												
			Conveying	3.6														
			Placing Concrete	3.7	G	RO												
			SD-03 Product Data															
			Expansion Joint Filler Strips	2.6	G	RO												
			Field-Molded Joint Sealant	2.7	G	RO												
			Curing Materials	2.9	G	RO												
			Batching and Mixing Equipment	1.5.1	G	RO												
			SD-07 Certificates															
			Cementitious Materials	2.1	G	RO												
			Aggregates	2.2	G	RO												
			Air-Entraining Admixture	2.3.1	G	RO												
			Water Reducing or Retarding	2.3.2	G	RO												
			Admixture															
			Chemical Admixtures	2.3	G	RO												
			Reinforcing Steel	2.5														
			Dowels		G	RO												

TRANSMITTAL OF SHOP DRAWINGS, EQUIPMENT DATA, MATERIAL SAMPLES, OR MANUFACTURER'S CERTIFICATES OF COMPLIANCE *(Read instructions on the reverse side prior to initiating this form)*	DATE	TRANSMITTAL NO.

SECTION I - REQUEST FOR APPROVAL OF THE FOLLOWING ITEMS *(This section will be initiated by the contractor)*

TO:	FROM:	CONTRACT NO.	CHECK ONE: ☐ THIS IS A NEW TRANSMITTAL ☐ THIS IS A RESUBMITTAL OF TRANSMITTAL _____
SPECIFICATION SEC. NO. *(Cover only one section with each transmittal)*	PROJECT TITLE AND LOCATION		CHECK ONE: THIS TRANSMITTAL IS FOR ☐ FIO ☐ GOV'T. APPROVAL

ITEM NO. *a.*	DESCRIPTION OF ITEM SUBMITTED *(Type size, model number/etc.)* *b.*	MFG OR CONTR. CAT., CURVE DRAWING OR BROCHURE NO. *(See instruction no. 8)* *c.*	NO. OF COPIES *d.*	CONTRACT REFERENCE DOCUMENT		FOR CONTRACTOR USE CODE *g.*	VARIATION *(See instruction No. 6)* *h.*	FOR CE USE CODE *i.*
				SPEC. PARA. NO. *e.*	DRAWING SHEET NO. *f.*			

REMARKS	**I certify that the above submitted items have been reviewed in detail and are correct and in strict conformance with the contract drawings and specifications except as other wise stated.** _____ NAME AND SIGNATURE OF CONTRACTOR

SECTION II - APPROVAL ACTION

ENCLOSURES RETURNED *(List by Item No.)*	NAME, TITLE AND SIGNATURE OF APPROVING AUTHORITY	DATE

INSTRUCTIONS

1. Section I will be initiated by the Contractor in the required number of copies.

2. Each transmittal shall be numbered consecutively in the space provided for "Transmittal No.". This number, in addition to the contract number, will form a serial number for identifying each submittal. For new submittals or resubmittals mark the appropriate box; on resubmittals, insert transmittal number of last submission as well as the new submittal number.

3. The "Item No." will be the same "Item No." as indicated on ENG FORM 4288-R for each entry on this form.

4. Submittals requiring expeditious handling will be submitted on a separate form.

5. Separate transmittal form will be used for submittals under separate sections of the specifications.

6. A check shall be placed in the "Variation" column when a submittal is not in accordance with the plans and specifications--also, a written statement to that effect shall be included in the space provided for "Remarks".

7. Form is self-transmittal, letter of transmittal is not required.

8. When a sample of material or Manufacturer's Certificate of Compliance is transmitted, indicate "Sample" or "Certificate" in column c, Section I.

9. U.S. Army Corps of Engineers approving authority will assign action codes as indicated below in space provided in Section I, column i to each item submitted. In addition they will ensure enclosures are indicated and attached to the form prior to return to the contractor. The Contractor will assign action codes as indicated below in Section I, column g, to each item submitted.

THE FOLLOWING ACTION CODES ARE GIVEN TO ITEMS SUBMITTED

A -- Approved as submitted.

B -- Approved, except as noted on drawings.

C -- Approved, except as noted on drawings. Refer to attached sheet resubmission required.

D -- Will be returned by separate correspondence.

E -- Disapproved (See attached).

F -- Receipt acknowledged.

FX -- Receipt acknowledged, does not comply as noted with contract requirements.

G -- Other *(Specify)*

10. Approval of items does not relieve the contractor from complying with all the requirements of the contract plans and specifications.

(Reverse of ENG Form 4025-R)

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DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01 42 00

SOURCES FOR REFERENCE PUBLICATIONS

PART 1 GENERAL

1.1 REFERENCES
1.2 ORDERING INFORMATION

-- End of Section Table of Contents --

SECTION 01 42 00

SOURCES FOR REFERENCE PUBLICATIONS

PART 1 GENERAL

1.1 REFERENCES

Various publications are referenced in other sections of the specifications to establish requirements for the work. These references are identified in each section by document number, date and title. The document number used in the citation is the number assigned by the standards producing organization, (e.g. ASTM B 564 Nickel Alloy Forgings). However, when the standards producing organization has not assigned a number to a document, an identifying number has been assigned for reference purposes.

1.2 ORDERING INFORMATION

The addresses of the standards publishing organizations whose documents are referenced in other sections of these specifications are listed below, and if the source of the publications is different from the address of the sponsoring organization, that information is also provided. Documents listed in the specifications with numbers which were not assigned by the standards producing organization should be ordered from the source by title rather than by number.

ACI INTERNATIONAL (ACI)
38800 Country Club Drive
Farmington Hills, MI 48331
Ph: 248-848-3700
Fax: 248-848-3701
E-mail: bkstore@concrete.org
Internet: http://www.concrete.org

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)
1819 L Street, NW, 6th Floor
Washington, DC 20036
Ph: 202-293-8020
Fax: 202-293-9287
E-mail: info@ansi.org
Internet: http://www.ansi.org/

--- ANSI documents beginning with the letter "S" can be ordered from:

Acoustical Society of America (ASA)
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Melville, NY 11747-4502
Ph: 516-576-2360
Fax: 516-576-2377
E-mail: asa@aip.org
Internet: http://asa.aip.org

AMERICAN SOCIETY OF SAFETY ENGINEERS (ASSE/SAFE)
1800 East Oakton Street
Des Plaines, IL 60018-2187
Ph: 847-699-2929
Fax: 847-768-3434
E-mail: customerservice@asse.org
Internet: http://www.asse.org

AMERICAN WELDING SOCIETY (AWS)
550 N.W. LeJeune Road
Miami, FL 33126
Ph: 800-443-9353 - 305-443-9353
Fax: 305-443-7559
E-mail: info@aws.org
Internet: http://www.aws.org

ASME INTERNATIONAL (ASME)
Three Park Avenue, M/S 10E
New York, NY 10016
Ph: 212-591-7722 or 800-843-2763
Fax: 212-591-7674
E-mail: infocentral@asme.org
Internet: http://www.asme.org

ASTM INTERNATIONAL (ASTM)
100 Barr Harbor Drive, P.O. Box C700
West Conshohocken, PA 19428-2959
Ph: 610-832-9500
Fax: 610-832-9555
E-mail: service@astm.org
Internet: http://www.astm.org

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Office of State Register
P.O. Box 94095
Baton Rouge, LA 70804-9095
Ph: 225-342-5015
Internet:

STATE OF LOUISIANA, AIR CONTROL COMMISSION (LACC)
P.O. Box 4301
Baton Rouge, LA 70821-4301
Ph: 225-219-3953
Fax: 225-219-3971
Internet:

LOUISIANA STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES (2006 Edition), LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT (LADOTD)
P.O. Box 94245
Baton Rouge, LA 70804-9245
Ph: 225-379-1200
Fax: 225-379-1851
Internet:

LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY (LDEQ)
P.O. Box 4301
Baton Rouge, LA 70821-4301
Ph: 225-219-3953

Fax: 225-219-3971
Internet:

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)
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Ph: 617-770-3000
Fax: 617-770-0700
E-mail: webmaster@nfpa.org
Internet: http://www.nfpa.org

NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH (NIOSH)
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Cincinnati, OH 45226-1998
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Fax: 513-533-8573
E-mail: pubstaff@cdc.gov
Internet: http://www.cdc.gov/niosh/homepage.html

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Internet: http://www.ntis.gov

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Silver Spring, MD 20910
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Fax: 301-585-4219
Internet: http://www.nrmca.org

RESEARCH COUNCIL ON STRUCTURAL CONNECTIONS (RCSC)
7269 S. Sundown Circle
Littleton, CO 80120
Ph: 303-797-1956
Internet:

THE SOCIETY FOR PROTECTIVE COATINGS (SSPC)
40 24th Street, 6th Floor

Pittsburgh, PA 15222-4656
Ph: 412-281-2331
Fax: 412-281-9992
E-mail: info@sspc.org
Internet: http://www.sspc.org

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Internet: http://www.usace.army.mil/publications
or http://www.hnd.usace.army.mil/techinfo/engpubs.htm

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Ph: 303-445-2072
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Fax: 703-605-6900
E-mail: info@ntis.gov
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General Services Administration
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Washington, DC 20405
Ph: 202-501-1021
Internet: www.GSA.gov

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QUALITY CONTROL SYSTEM (QCS)

PART 1 GENERAL

1.1 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.

1.2 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

1.2.1 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.

1.2.2 Other Factors

Particular attention is directed to Contract Clause, "Schedules for Construction Contracts (FAR 52.236-15)", Contract Clause, "Payments Under Fixed Price Construction Contracts (FAR 52.232-5)", , Section 01 33 00, SUBMITTAL PROCEDURES, Section 01 45 04.00 10, CONTRACTOR QUALITY CONTROL,and 01 32 16.00 20 CONSTRUCTION PROGRESS DOCUMENTATION which have a direct relationship to the reporting to be accomplished through QCS. Also, 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.

1.3 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.

1.4 SYSTEM REQUIREMENTS

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

QCS and QAS 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: 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

1.5 RELATED INFORMATION

1.5.1 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.

1.5.2 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.

1.6 CONTRACT DATABASE

Prior to the pre-construction conference, the Government will 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.

1.7 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, e-mail or CD-ROM may be used instead of E-mail (see Paragraph DATA SUBMISSION VIA CD-ROM). The QCS database typically shall include current data on the following items:

1.7.1 Administration

1.7.1.1 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, deliver Contractor administrative data in electronic format.

1.7.1.2 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. Assign each Subcontractor/trade a unique Responsibility Code, provided in QCS. Within 14 calendar days of receipt of QCS software from the Government, deliver Subcontractor administrative data in electronic format.

1.7.1.3 Correspondence

Identify all Contractor correspondence to the Government with a serial number. Prefix correspondence initiated by the Contractor's site office with "S". Prefix letters initiated by the Contractor's home (main) office 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".

1.7.1.4 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.

1.7.1.5 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.

1.7.1.6 Request For Information (RFI)

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

1.7.2 Finances

1.7.2.1 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. Group pay activities Contract Line Item Number (CLIN); the sum of the activities shall equal the amount of each CLIN. The total of all CLINs equals the Contract Amount.

1.7.2.2 Payment Requests

Prepare all progress payment requests using QCS. Complete the payment request worksheet, prompt payment certification, and payment invoice in QCS. Update the work completed under the contract, measured as percent or as specific quantities, at least monthly. After the update, 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 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 will govern in the event of discrepancy with the electronic version.

1.7.3 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. Maintain this data on a daily basis. Entered data will automatically output to the QCS generated daily report. Provide the Government a Contractor Quality Control (CQC) Plan within the time required in Section 01 45 04.00 10, CONTRACTOR QUALITY CONTROL. Within seven calendar days of Government acceptance, 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.

1.7.3.1 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 01 45 04.00 10, 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.

1.7.3.2 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.

1.7.3.3 QC Requirements

Develop and maintain a complete list of QC testing and required structural and life safety special inspections required by the International Code Council (ICC), 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.

1.7.3.4 Three-Phase Control Meetings

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

1.7.3.5 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.

1.7.3.6 Accident/Safety Reporting

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. Regularly update the correction status of the safety comments. In addition, 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.

1.7.3.7 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.

1.7.3.8 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

1.7.4 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. QCS and RMS will be used to update, store and exchange submittal registers and transmittals, but will not be used for storage of actual submittals.

1.7.5 Schedule

Develop a construction schedule consisting of pay activities, in accordance with Contract Clause "Schedules for Construction Contracts" and Section 01 32 16.00 20, 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) The updated schedule data shall be included with each pay request submitted by the Contractor.

1.7.6 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 from RMS, and schedule data using SDEF.

1.8 IMPLEMENTATION

Contractor use of QCS as described in the preceding paragraphs is mandatory. 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.

1.9 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:

1.9.1 File Medium

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

1.9.2 CD-ROM Labels

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.

1.9.3 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.

1.10 MONTHLY COORDINATION MEETING

Update the QCS database each workday. At least monthly, 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, meet with the Government representative to review the planned progress payment data submission for errors and omissions.

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.

1.11 NOTIFICATION OF NONCOMPLIANCE

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

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

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CONTRACTOR QUALITY CONTROL

PART 1 GENERAL

1.1 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.

ASTM INTERNATIONAL (ASTM)

ASTM D 3740	(2004a) Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction
ASTM E 329	(2005b) Standard Specification for Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction

1.2 PAYMENT

Separate payment will not be made for providing and maintaining an effective Quality Control program, and all costs associated therewith shall be included in the applicable unit prices or lump-sum prices contained in the Bidding Schedule.

1.3 ELECTRONIC TEST REPORT DATA

As part of the Contractor's Quality Control Program, electronic transmission of test report data in the prescribed formats in addition to the original test report data shall be furnished to the Government. The New Orleans District Construction Control Manual (NODCC Manual) specifies the minimum number of tests to be made and includes forms which shall be used to report test data. The Technical Specification sections may include testing and/or frequency requirements other than those listed in the NODCC Manual. The more comprehensive requirements shall govern in case of conflict. Two copies of the NODCC Manual will be furnished to the Contractor by the Government.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

3.1 GENERAL REQUIREMENTS

The Contractor is responsible for quality control and shall establish and maintain an effective quality control system in compliance with the Contract Clause in Section 00700, entitled "Inspection Of Construction"

(FAR 52.246-12). The quality control system shall consist of plans, procedures, and organization necessary to produce an end product which complies with the contract requirements. The system shall cover all construction operations, both onsite and offsite, and shall be keyed to the proposed construction sequence. The site project superintendent and Quality Control Manager will be held responsible for the quality of work on the job and is subject to removal by the Contracting Officer for non-compliance with the quality requirements specified in the contract. The site project superintendent in this context shall be the highest level manager responsible for the overall construction activities at the site, including quality and production. The site project superintendent shall maintain a physical presence at the site at all times, except as otherwise acceptable to the Contracting Officer, and shall be responsible for all construction and construction related activities at the site.

3.2 QUALITY CONTROL PLAN

The Contractor shall furnish for review by the Government, not later than 15 days after receipt of notice of award, the Contractor Quality Control (CQC) Plan proposed to implement the requirements of the Contract Clause in Section 00700, entitled "Inspection Of Construction" (FAR 52.246-12) The plan shall identify personnel, procedures, control, instructions, tests, records, and forms to be used. The Government will consider an interim plan for the first 30 days of operation. Construction will be permitted to begin only after acceptance of the CQC Plan or acceptance of an interim plan applicable to the particular feature of work to be started. Work outside of the features of work included in an accepted interim plan will not be permitted to begin until acceptance of a CQC Plan or another interim plan containing the additional features of work to be started. A sample CQC Plan is attached at the end of the section.

3.2.1 Content of the CQC Plan

The CQC Plan shall include, as a minimum, the following to cover all construction operations, both onsite and offsite, including work by subcontractors, fabricators, suppliers, and purchasing agents:

a. A description of the quality control organization, including a chart showing lines of authority and acknowledgment that the CQC staff shall implement the three phase control system for all aspects of the work specified. The staff shall include a CQC System Manager who shall report to the project superintendent.

b. The name, qualifications (in resume format), duties, responsibilities, and authorities of each person assigned a CQC function.

c. A copy of the letter to the CQC System Manager signed by an authorized official of the firm which describes the responsibilities and delegates sufficient authorities to adequately perform the functions of the CQC System Manager, including authority to stop work which is not in compliance with the contract. The CQC System Manager shall issue letters of direction to all other various quality control representatives outlining duties, authorities, and responsibilities. Copies of these letters shall also be furnished to the Government.

d. Procedures for scheduling, reviewing, certifying, and managing submittals, including those of subcontractors, offsite

fabricators, suppliers, and purchasing agents. These procedures shall be in accordance with Section 01 33 00 SUBMITTAL PROCEDURES.

e. Control, verification, and acceptance testing procedures for each specific test to include the test name, specification paragraph requiring test, feature of work to be tested, test frequency, and person responsible for each test. (Laboratory facilities approved by the Contracting Officer shall be used.)

f. Procedures for tracking preparatory, initial, and follow-up control phases and control, verification, and acceptance tests including documentation.

g. Procedures for tracking construction deficiencies from identification through acceptable corrective action. These procedures shall establish verification that identified deficiencies have been corrected.

h. Reporting procedures, including proposed reporting formats.

i. A list of the definable features of work. A definable feature of work is a task which is separate and distinct from other tasks, has separate control requirements, and may be identified by different trades or disciplines, or it may be work by the same trade in a different environment. Although each section of the specifications may generally be considered as a definable feature of work, there are frequently more than one definable features under a particular section. This list will be agreed upon during the coordination meeting.

3.2.2 Acceptance of Plan

Acceptance of the Contractor's plan is required prior to the start of construction. Acceptance is conditional and will be predicated on satisfactory performance during the construction. The Government reserves the right to require the Contractor to make changes in his/her CQC Plan and operations including removal of personnel, as necessary, to obtain the quality specified.

3.2.3 Notification of Changes

After acceptance of the CQC Plan, the Contractor shall notify the Contracting Officer in writing of any proposed change. Proposed changes are subject to acceptance by the Contracting Officer.

3.3 COORDINATION MEETING

After the Preconstruction Conference, before start of construction, and prior to acceptance by the Government of the CQC Plan, the Contractor shall meet with the Contracting Officer or Authorized Representative and discuss the Contractor's quality control system. The CQC Plan shall be submitted for review a minimum of 14 calendar days prior to the Coordination Meeting. During the Coordination Meeting, a mutual understanding of the system details shall be developed, including the forms for recording the CQC operations, control activities, testing, administration of the system for both onsite and offsite work, and the interrelationship of Contractor's Management and control with the Government's Quality Assurance. Minutes of the meeting shall be prepared by the Government and signed by both the Contractor and the Contracting Officer. The minutes shall become a part of

the contract file. There may be occasions when subsequent conferences will be called by either party to reconfirm mutual understandings and/or address deficiencies in the CQC system or procedures which may require corrective action by the Contractor.

3.4 QUALITY CONTROL ORGANIZATION

3.4.1 Personnel Requirements

The requirements for the CQC organization are a CQC System Manager and sufficient number of additional qualified personnel to ensure safety and contract compliance. The Safety and Health Manager shall serve as a member of the CQC staff. Personnel identified in the technical provisions as requiring specialized skills to assure the required work is being performed properly will also be included as part of the CQC organization. The Contractor's CQC staff shall maintain a presence at the site at all times during progress of the work and have complete authority and responsibility to take any action necessary to ensure contract compliance. The CQC staff shall be subject to acceptance by the Contracting Officer. The Contractor shall provide adequate office space, filing systems and other resources as necessary to maintain an effective and fully functional CQC organization. Complete records of all letters, material submittals, shop drawing submittals, schedules and all other project documentation shall be promptly furnished to the CQC organization by the Contractor. The CQC organization shall be responsible to maintain these documents and records at the site at all times, except as otherwise acceptable to the Contracting Officer.

3.4.2 CQC System Manager

The Contractor shall identify as CQC System Manager an individual within the onsite work organization who shall be responsible for overall management of CQC and have the authority to act in all CQC matters for the Contractor. The CQC System Manager shall be a construction person with a minimum of 3 years in related work. This CQC System Manager shall be on the site at all times during construction and shall be employed by the prime Contractor. The CQC System Manager shall be assigned as System Manager but may have duties as project superintendent in addition to quality control. An alternate for the CQC System Manager shall be identified in the plan to serve in the event of the System Manager's absence. The requirements for the alternate shall be the same as for the designated CQC System Manager.

3.4.3 CQC Personnel

In addition to CQC personnel specified elsewhere in the contract, the Contractor shall provide as part of the CQC organization specialized personnel to assist the CQC System Manager for the following areas: civil, environmental, materials technician, submittals clerk,. These individuals may be employees of the prime or subcontractor; be responsible to the CQC System Manager; be physically present at the construction site during work on their areas of responsibility; have the necessary education and/or experience in accordance with the experience matrix listed herein. These individuals may perform other duties but must be allowed sufficient time to perform their assigned quality control duties as described in the Quality Control Plan. A single person may cover more than one area provided that they are qualified to perform QC activities in each designated and that workload allows.

Experience Matrix

	Area	Qualifications
a.	Civil	Graduate Civil Engineer or Construction Manager with 2 years experience in the type of work being performed on this project or technician with 5 yrs related experience
b.	Environmental	Graduate Environmental Engineer with 3 yrs experience
c.	Submittals	Submittal Clerk with 1 yr experience
d.	Concrete, Pavements and Soils	Materials Technician with 2 yrs experience for the appropriate area

3.4.4 Additional Requirement

In addition to the above experience and education requirements the CQC System Manager shall have completed the course entitled "Construction Quality Management For Contractors" within the past 5 years. This course is periodically offered at the New Orleans District and other Corps of Engineers districts.

3.4.5 Organizational Changes

The Contractor shall maintain the CQC staff at full strength at all times. When it is necessary to make changes to the CQC staff, the Contractor shall revise the CQC Plan to reflect the changes and submit the changes to the Contracting Officer for acceptance.

3.5 SUBMITTALS AND DELIVERABLES

Submittals, if needed, shall be made as specified in Section 01 33 00 SUBMITTAL PROCEDURES. The CQC organization shall be responsible for certifying that all submittals and deliverables are in compliance with the contract requirements.

3.6 CONTROL

Contractor Quality Control is the means by which the Contractor ensures that the construction, to include that of subcontractors and suppliers, complies with the requirements of the contract. At least three phases of control shall be conducted by the CQC System Manager for each definable feature of the construction work as follows:

3.6.1 Preparatory Phase

This phase shall be performed prior to beginning work on each definable feature of work, after all required plans/documents/materials are approved/accepted, and after copies are at the work site. This phase shall include:

a. A review of each paragraph of applicable specifications

b. A review of the contract drawings.

c. A check to assure that all materials and/or equipment have been tested, submitted, and approved.

d. Review of provisions that have been made to provide required control inspection and testing.

e. Examination of the work area to assure that all required preliminary work has been completed and is in compliance with the contract.

f. A physical examination of required materials, equipment, and sample work to assure that they are on hand, conform to approved shop drawings or submitted data, and are properly stored.

g. A review of the appropriate activity hazard analysis to assure safety requirements are met.

h. Discussion of procedures for controlling quality of the work including repetitive deficiencies. Document construction tolerances and workmanship standards for that feature of work.

i. A check to ensure that the portion of the plan for the work to be performed has been accepted by the Contracting Officer.

j. Discussion of the initial control phase.

k. The Government Quality Assurance personnel shall be notified at least 48 hours in advance of beginning the preparatory control phase. The Contractor shall submit a written agenda of the topics to be discussed at the preparatory meeting on the day prior to the meeting date. This phase shall include a meeting conducted by the CQC System Manager and attended by the superintendent, other CQC personnel (as applicable), Government Quality Assurance personnel, and the foreman responsible for the definable feature. The results of the preparatory phase actions shall be documented by separate minutes prepared by the CQC System Manager and attached to the daily CQC report. The Contractor shall instruct applicable workers as to the acceptable level of workmanship required in order to meet contract specifications.

3.6.2 Initial Phase

This phase shall be accomplished at the beginning of a definable feature of work. The following shall be accomplished:

a. A check of work to ensure that it is in full compliance with contract requirements. Review minutes of the preparatory meeting.

b. Verify adequacy of controls to ensure full contract compliance. Verify required control inspection and testing.

c. Establish level of workmanship and verify that it meets minimum acceptable workmanship standards. Compare with required sample panels as appropriate.

d. Resolve all differences.

e. Check safety to include compliance with and upgrading of the safety plan and activity hazard analysis. Review the activity analysis with each worker.

f. The Government shall be notified at least 24 hours in advance of beginning the initial phase. Separate minutes of this phase shall be prepared by the CQC System Manager and attached to the daily CQC report. Exact location of initial phase shall be indicated for future reference and comparison with follow-up phases.

g. The initial phase should be repeated for each new crew to work onsite, or any time acceptable specified quality standards are not being met.

3.6.3 Follow-up Phase

Daily checks shall be performed to assure control activities, including control testing, are providing continued compliance with contract requirements, until completion of the particular feature of work. The checks shall be made a matter of record in the CQC documentation. Final follow-up checks shall be conducted and all deficiencies corrected prior to the start of additional features of work which may be affected by the deficient work. The Contractor shall not build upon nor conceal non-conforming work.

3.6.4 Additional Preparatory and Initial Phases

Additional preparatory and initial phases shall be conducted on the same definable features of work if: the quality of on-going work is unacceptable; if there are changes in the applicable CQC staff, onsite production supervision or work crew; if work on a definable feature is resumed after a substantial period of inactivity; or if other problems develop.

3.7 TESTS

3.7.1 Testing Procedure

The Contractor shall perform specified or required tests to verify that control measures are adequate to provide a product which conforms to contract requirements. The Contractor shall notify the Contracting Officer's Representative (COR) at least 24 hours prior to all quality control testing in order to coordinate simultaneous quality assurance tests if the COR elects to do so. Upon request, the Contractor shall furnish to the Government duplicate samples of test specimens for possible testing by the Government. Testing includes operation and/or acceptance tests when specified. The Contractor shall procure the services of a Corps of Engineers approved testing laboratory or establish an approved testing laboratory at the project site. Depending upon the workload by the Government inspecting agency, acceptance or rejection of the Contractor proposed testing laboratory is usually done approximately 60 to 120 days after notification is received from the Contractor. The certification will be valid for two years. The Contractor shall perform the following activities and record and provide the following data:

a. Verify that testing procedures comply with contract requirements.

b. Verify that facilities and testing equipment are available and comply with testing standards.

c. Check test instrument calibration data against certified standards.

d. Verify that recording forms and test identification control number system, including all of the test documentation requirements, have been prepared.

e. Results of all tests taken, both passing and failing tests, shall be recorded on the CQC report for the date taken. Specification paragraph reference, location where tests were taken, and the sequential control number identifying the test shall be given. If approved by the Contracting Officer, actual test reports may be submitted later with a reference to the test number and date taken. An information copy of tests performed by an offsite or commercial test facility shall be provided directly to the Contracting Officer. Failure to submit timely test reports as stated may result in nonpayment for related work performed and disapproval of the test facility for this contract.

f. Field soil sampling and testing locations shall be recorded using GPS coordinates accurate to the meter range.

g. An informational electronic copy (PDF file of actual test result) of all material tests performed (regardless of whether performed by an offsite test facility or an on-site test facility) shall be electronically transmitted to a Government FTP location within 24 hours of test report completion. An electronic data entry form (Excel based) will be provided by the Government to enter electronic data, in a format prescribed by the Government. This data file shall contain the results of the required material tests. The Government will provide the required template for data transmission at the CQC Plan Coordination Meeting.

3.7.2 Testing Laboratories

3.7.2.1 Capability Check

The Government reserves the right to check laboratory equipment in the proposed laboratory for compliance with the standards set forth in the contract specifications and to check the laboratory technician's testing procedures and techniques. Laboratories utilized for testing soils, concrete, asphalt, and steel shall meet criteria detailed in ASTM D 3740 and ASTM E 329.

3.7.2.2 Capability Recheck

If the selected laboratory fails the capability check, the Contractor will be assessed a charge of $5000.00 to reimburse the Government for each succeeding recheck of the laboratory or the checking of a subsequently selected laboratory. Such costs will be deducted from the contract amount due the Contractor.

3.7.3 Onsite Laboratory

The Government reserves the right to utilize the Contractor's control testing laboratory and equipment to make assurance tests, and to check the

Contractor's testing procedures, techniques, and test results at no additional cost to the Government.

3.7.4 Furnishing or Transportation of Samples for Testing

Costs incidental to the transportation of samples or materials shall be borne by the Contractor. Samples of materials for test verification and acceptance testing by the Government shall be delivered to the Corps of Engineers Division Laboratory, f.o.b., at the following address:

For All Materials Except Painting Materials and Quality Assurance Concrete Test Cylinders:

U.S. Army Engineer Research and Development Center (ERDC)Waterways Experiment Station
Geotechnical and Structures Laboratory
3909 Halls Ferry Road
Vicksburg, Mississippi 39180-6199

For Painting Materials: (Liquid samples must have Materials Safety Data Sheets enclosed with the sample):

Sample Delivery Address:

U. S. Army Engineer Research and Development Center
Construction Engineering Research Laboratory Warehouse
Attn: Paint Technology Center
2902 Farber Drive
Champaign, Illinois 61822

Mailing Address:

U. S. Army Engineer Research and Development Center
Construction Engineering Research Laboratory
Attn: Paint Technology Center
PO Box 9005
Champaign, Illinois 61826-9005

Physical address:

U.S. Army Construction Engineering Research Laboratory
2902 Newmark Drive
Champaign, Illinois 61821

Mailing address:

U.S. Army Construction Engineering Research Laboratory
P.O. Box 9005
Champaign, Illinois 61826-9005

For Quality Assurance Concrete Test Cylinders:

U.S. Army Corps of Engineers
New Orleans District
Soils and Materials Processing Unit, Room 105
7400 Leake Ave
Room 105
Soils and Materials Processing Unit
New Orleans, Louisiana 70118-3651

Concrete test cylinders shall only be delivered on Federal workdays between 8:30 AM and 3:00 PM. Coordination for each specific test, exact delivery location, and dates will be made through the Area Office. Details on the soils and materials testing laboratory and additional instructions for delivery of the QA samples will be given at the preconstruction conference

3.8 COMPLETION INSPECTION

3.8.1 Punch-Out Inspection

Near the end of the work, or any increment of the work established by a time stated in the Contract Clause in Section 00700, entitled "Commencement, Prosecution, and Completion of Work (FAR 52.211-10)" or stated elsewhere in the specifications, the CQC Manager shall conduct an inspection of the work. A punch list of items which do not conform to the approved drawings and specifications shall be prepared and included in the CQC documentation, as required by paragraph DOCUMENTATION. The list of deficiencies shall include the estimated date by which the deficiencies will be corrected. The CQC System Manager or staff shall make a second inspection to ascertain that all deficiencies have been corrected. Once this is accomplished, the Contractor shall notify the Government that the facility is ready for the Government Pre-Final inspection.

3.8.2 Pre-Final Inspection

The Government will perform the pre-final inspection to verify that the work is complete . A Government Pre-Final Punch List may be developed as a result of this inspection. The Contractor's CQC System Manager shall ensure that all items on this list have been corrected before notifying the Government, so that a Final inspection with the customer can be scheduled. Any items noted on the Pre-Final inspection shall be corrected in a timely manner. These inspections and any deficiency corrections required by this paragraph shall be accomplished within the time slated for completion of the entire work or any particular increment of the work if the project is divided into increments by separate completion dates.

3.8.3 Final Acceptance Inspection

The Contractor's Quality Control Inspection personnel, plus the superintendent or other primary management person, and the Contracting Officer's Representative shall be in attendance at this inspection. Additional Government personnel including, but not limited to, those from the New Orleans District, Mississippi Valley Division, and local interest may also be in attendance. The final acceptance inspection will be formally scheduled by the Contracting Officer based upon results of the Pre-Final inspection. Notice shall be given to the Contracting Officer at least 14 days prior to the final acceptance inspection and shall include the Contractor's assurance that all specific items previously identified to the Contractor as being unacceptable, along with all remaining work performed under the contract, will be complete and acceptable by the date scheduled for the final acceptance inspection. Failure of the Contractor to have all contract work acceptably complete for this inspection will be cause for the Contracting Officer to bill the Contractor for the Government's additional inspection cost in accordance with the Contract Clause in Section 00700 entitled, "Inspection Of Construction" (FAR 52.246-12).

3.9 DOCUMENTATION

The Contractor shall maintain current records providing factual evidence that required quality control activities and/or tests have been performed. These records shall include the work of subcontractors and suppliers and shall be on an acceptable form that includes, as a minimum, the following information:

a. Contractor/subcontractor and their area of responsibility.

b. Operating plant/equipment with hours worked, idle, or down for repair.

c. Work performed each day, giving location, description, and by whom. When Network Analysis (NAS) is used, identify each phase of work performed each day by NAS activity number.

d. Test and/or control activities performed with results and references to specifications/drawings requirements. The control phase shall be identified (Preparatory, Initial, Follow-up). List of deficiencies noted, along with corrective action.

e. Quantity of materials received at the site with statement as to acceptability, storage, and reference to specifications/drawings requirements.

f. Submittals and deliverables reviewed, with contract reference, by whom, and action taken.

g. Offsite surveillance activities, including actions taken.

h. Job safety evaluations stating what was checked, results, and instructions or corrective actions.

i. Instructions given/received and conflicts in plans and/or specifications.

j. Contractor's verification statement.

These records shall indicate a description of trades working on the project; the number of personnel working; weather conditions encountered; and any delays encountered. These records shall cover both conforming and deficient features and shall include a statement that equipment and materials incorporated in the work and workmanship comply with the contract. The original and one copy of these records in report form shall be furnished to the Government daily within 12 hours after the date covered by the report, except that reports need not be submitted for days on which no work is performed. As a minimum, one report shall be prepared and submitted for every 7 days of no work and on the last day of a no work period. All calendar days shall be accounted for throughout the life of the contract. The first report following a day of no work shall be for that day only. Reports shall be signed and dated by the CQC System Manager. The report from the CQC System Manager shall include copies of test reports and copies of reports prepared by all subordinate quality control personnel.

3.10 SAMPLE FORMS

Sample forms for guidance in preparing the CQC Plan are enclosed at the end

of this section.

3.11 NOTIFICATION OF NONCOMPLIANCE

The Contracting Officer will notify the Contractor of any detected noncompliance with the foregoing requirements. 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. If the Contractor fails or refuses to comply promptly, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to such stop orders shall be made the subject of claim for extension of time or for excess costs or damages by the Contractor.

-- End of Section --

US Army Corps of Engineers ®
New Orleans District

Construction Control Manual

Sampling & Testing Construction Materials

Reporting Test Results

CEMVN PAM 415-X-X
1 June 2008

DEPARTMENT OF THE ARMY
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS
P.O. BOX 60267
NEW ORLEANS, LOUISIANA 70160-0267

5/15/08

CEMVN-CD

Pamphlet
Number CEMVN-CD-415-X-X 1 June 2008

Construction

CONSTRUCTION CONTROL MANUAL

1. Purpose. This manual describes the means and methods for the Contractor Quality Control (CQC) and Government Quality Assurance (QA) testing of some of the more common construction materials incorporated into New Orleans District projects. Information is given on sampling, the test required, testing frequency, reporting requirements, and database maintenance. This manual only describes a minimum testing program on a limited number of common construction materials and the specifications may require additional tests that demonstrate compliance with the contract documents.

2. Applicability. This manual applies to all New Orleans District elements having responsibility for the design and construction of assigned projects.

3. Scope of the Manual. This manual is intended to guide the Quality Control and Quality Assurance process and provide for the construction of a project whose quality and durability is a direct reflection of the Contractor's and the Government's efforts in meeting the project's goals and objectives. If there is a conflict between this manual and the technical specification sections, the most stringent requirements shall govern.

ALVIN B. LEE
COL, MVN
Commanding

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
P.O. BOX 60267
NEW ORLEANS, LOUISANA 70160-0267

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Construction
CONSTRUCTION CONTROL MANUAL

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Chapter 1

Introduction

1-1. General. This manual describes the means and methods for the Contractor Quality Control and Government Quality Assurance testing of construction materials incorporated into the New Orleans District (CEMVN) projects. Information is given on sampling, the test required, testing frequency, reporting requirements, and database maintenance. This manual only describes a minimum testing program on a limited number of common construction materials and the specifications may require additional tests that demonstrate compliance with the contract documents. If there is a conflict between this manual and the technical specification sections, the most stringent requirements shall govern. The most recent version of this manual at the time of contract solicitation will supplement the construction material control requirements for a specific contract unless noted otherwise.

1-2. Definitions.

a. Quality Management System. Quality management is defined as all control, inspection, and other assurance activities instituted to achieve the product quality established by the contract plans and specifications.

b. Contractor Quality Control. Contractor Quality Control (CQC) is that part of the system by which the Contractor regulates, tests and inspects their own, suppliers, and subcontractors procedures, equipment, materials, and personnel so that the completed product will comply with the requirements of the project's contract documents.

c. Government Quality Assurance. Government Quality Assurance (QA) is that part of the system by which the Government verifies or assures that the Contractor's Quality Control system is performing properly and the completed product conforms to the contract documents. The number of CQC test observed by QA personnel should be generally related to the consistency in CQC and QA test results.

1-3. Responsibility, Compilation, and Submittal of Test Results.

a. The contractor is responsible for complying with the contract documents in the performance of all required tests and the preparation, submittal, and maintenance of those test reports outlined in this manual and the contract specifications. The test results from QC and QA testing shall be compiled separately as outlined in this manual.

b. All test results will be entered into the CEMVN material testing database as described in Appendix A. Test results will be entered into the testing database within 24 hours after test completion. Payment for any material placed, as well as for any subsequent construction, will not be made until test results are entered into the database and analyzed by Quality Control and Quality Assurance personnel. The Contractor shall maintain a hard copy of the materials testing log and test reports at the Contractor's field

office. These records will be available at all times for review by Government personnel. The original test report will be distributed to the Administrative Contracting Officer (ACO) within 48 hours of completion of the test. This original test report submission is in addition to any required electronic submission.

c. Any failing tests, i.e. those not indicating conformance with the contract documents, will be immediately reported to the Administrative Contracting Officer along with the recommended corrective action to bring the work into complete compliance with the specifications. The Administrative Contracting Officer may designate additional re-sampling or retesting to verify the work represented by the failing test. This testing is at the Contractor's expense.

d. Reference to standard test methods and testing procedures for sampling and testing of common construction materials are given in each chapter of this manual. Additional testing may also be required in the contract documents.

e. Random Quality Assurance tests will provide further assurance of the contractor's compliance with the contract requirements and specifications. These results will also be entered into the testing database for record purposes. Quality Assurance testing will be as described in the contract specific QA plan but the recommended minimum testing frequency is five percent of the number of quality control tests.

f. Laboratory Facilities. The contractor shall only use those laboratories, including his own that have been inspected and/or validated by an inspection or audit performed by the Materials Testing Center, Corps of Engineers. Appendix B further describes this requirement. Refer to Chapter 4 for welding laboratories.

Chapter 2

Soils

2-1. Scope. This chapter prescribes methods and procedures for the Contractor Quality Control (CQC) and Government Quality Assurance (QA) testing of materials used in compacted levee embankments and berms, un-compacted berms, ramps, and structural backfill.

2-2. Samples. Samples shall be collected and secured in accordance with individually specified ASTM testing procedures as applicable.

2-3. Tests. Testing and reporting shall be performed in accordance with the American Society of Testing and Materials (ASTM) Standards as indicated below in Table 2-1.

Table 2-1

ASTM References

Gradation	
ASTM C 136	Sieve or Screen Analysis of Fine and Course Aggregates
ASTM C 117	Materials Finer than No. 200 Sieve in Mineral Aggregates by Washing
Moisture Content	
ASTM D 2216	Laboratory Determination of Water, (Moisture) Content of Soil and Rock by Mass (Method B)
ASTM D 4643	Determination of Water (Moisture) Content of Soil by Microwave Method
Moisture/Density Relationship	
ASTM D 698	Laboratory Compaction Characteristics of Soil Using Standard Efforts (12,400ft lbs/ft^3 (6000KN))
Field Density	
ASTM D 1556	Density and Unit Weight of Soil in Place by the Sand-Cone Method
ASTM D 6938	In-Place Density and Water Content of Soil and Soil-Aggregate Nuclear Methods (Shallow Depth)
Materials Classification	
ASTM D 2487	Classification of Soils for Engineering Purposes
Organic Content	
ASTM D 2974	Moisture, Ash, and Organic Matter of Peat and Other Organic Soils (Method C)

2-4. Sampling and Testing of Compacted Embankments and Berms, Ramps, and Structural Backfill Material. This sampling and testing shall be in accordance with the

standard procedures referred to in this manual. The minimum number of CQC tests to be performed shall be as indicated in Table 2-2.

Table 2-2

Type of Tests and Frequency of Testing
Compacted Embankments and Berms, Ramps, and Structural Backfill Material

	Frequency	**Standard**
Field Density	One test per 1,500 cubic yards of compacted fill placed per lift, but not less than one density test per 500 linear feet per lift. A lift placed on any one side of an existing embankment will be considered as a separate lift. At least one test shall be performed in any shift that compacted fill is placed.	ASTM D 1556 ASTM D 6938 (11.3.2 only, ASTM D 3017 is not applicable to field density testing)
Moisture/Density Determination	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, 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 density.	ASTM D 698
One-Point Proctor Verification	One test to be obtained for every five (5) field density locations.	ASTM D 698 (modified, under development)
Moisture Content	One test at each field density test location.	ASTM D 2216 (at lab) ASTM D 4643 (in field)
Organic Content	One test at each field density test location.	ASTM D 2974 (Method C)
Materials Classification	One test obtained for each control compaction curve and one test for each field density test.	ASTM D 2487 ASTM C 136 ASTM C 117

2-5. Sampling and Testing of Un-Compacted Berm Material. This sampling and testing shall be in accordance with the standard procedures referred to in this manual. The minimum number of QC tests to be performed shall be as indicated in Table 2-3.

Table 2-3

Type of Tests and Frequency of Testing
Un-Compacted Berm Material

	Frequency	**Standard**
Organic Content	One test at materials classification test location.	ASTM D 2974 (Method C)
Materials Classification	One test per 3,000 cubic yards of un-compacted fill placed, but not less than one test per 1,000 linear feet of un-compacted fill placed. At least one test shall be performed in any shift that un-compacted fill is placed.	ASTM D 2487 ASTM C 136 ASTM C 117

2-6. Compilation of Test Data for Submittal. The results of the following tests shall be recorded in the MVN testing database. Samples of the reporting forms are given in this chapter and described as follows.

a. Compaction – Moisture Density Relationship Determination – ASTM D 698 (Figure 2-1). This form is to be used in reporting the determination of the optimum moisture content and the maximum dry density. The moisture-density curve shall be plotted based on a minimum of five compaction test specimens. The results shall be submitted electronically within 24 hours of the test. A one-point Proctor test – ASTM D 698 (modified, Figure 2-2) shall be obtained for every five (5) field density test locations, and reported with same.

b. Field Density – Sand Cone Method – ASTM D 1556 (Figure 2-3). This form is to be used in reporting the determination of the degree of compaction. Contract specifications shall govern the required compaction effort. The results shall be submitted electronically within 24 hours of the test.

c. Field Density Test – Nuclear Method – ASTM D 6938 (Figure 2-4). This form is to be used in reporting the determination of the degree of compaction. Contract specifications shall govern the required compaction effort. 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 confirmation shall be accomplished by performing an initial comparison test of the two methods at the start of construction. The initial comparison test shall be determined by conducting ten comparison tests (five D-6938 & five D-1556) and calculating the average difference (correction) for each soil type encountered. For comparison purposes, the nuclear and sand-cone wet densities should represent the same layer thickness within the testing area selected. 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 nuclear method wet density is within three percent (3%) 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. If the variance at any time exceeds three percent (3%), a correction factor will be required to be determined prior to any further testing. The correction factor shall be determined by conducting ten comparison tests (five D-6938 & 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. When a field density result is in doubt, the sand-cone density test shall be considered the rule for acceptance. The results shall be submitted electronically within 24 hours of the test.

d. Moisture Content Determination – ASTM D 2216 (Method B) (Figure 2-5). This form is to be used in reporting the determination of the moisture content of the material when ASTM D 2216 (Method B) is the test method utilized. Contract specifications shall govern the acceptable limits of moisture content. The results shall be submitted electronically within 24 hours of the test.

e. Moisture Content Determination – ASTM D 4643 (Figure 2-6). This form is to be used in reporting the determination of the moisture content of the in-place material when ASTM D 4643 is the test method utilized. Contract specifications shall govern the acceptable limits of moisture content. The results shall be submitted electronically within 24 hours of the test.

f. Moisture, Ash, and Organic Content Determination – ASTM D 2974 (Method C) (Figure 2-7). This form is to be used in reporting the determination of the organic content of the material. Determination of organic content shall be performed in accordance with ASTM D 2974, Method C. Contract specifications shall govern the acceptable limits of organic content. The results shall be submitted electronically within 48 hours of the test.

g. Material Classification (Figure 2-8 and Figure 2-9). Unified Soil Classification System– ASTM D 2487 (Figure 2-8) is to be used to report the determination of the liquid limit, plastic limit, and plasticity index of the material if a non-granular material is specified for structural backfill, and also for all embankment fill. Sieve Analysis – ASTM C 117 and ASTM C 136 (Figure 2-9) is to be used to report the results of gradation tests of the material if a granular material is specified for structural backfill. The final soil classification in accordance with ASTM D 2487 shall be stated on same forms. Contract specifications shall govern the acceptable Atterberg limits, gradation limits, and material classification. If the Nuclear Method (ASTM D 6938) is used for field density determinations, the soil sample utilized for material classification 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. The results shall be submitted electronically within 24 hours of the test.

h. Additional Testing. In addition to the above frequency of tests, additional tests may be required as follows:

(1) Where the Administrative Contracting Officer or Contracting Officer's Representative (COR) has reason to doubt the adequacy of the compaction, moisture content, or organic content control.

(2) Where the Contractor is concentrating fill operations over a relatively small area.

(3) When embankment materials change substantially, the Administrative Contracting Officer or Contracting Officer's Representative (COR) may direct additional testing.

(4) Where special compaction procedures are being used.

(5) When the contract specifications require additional testing.

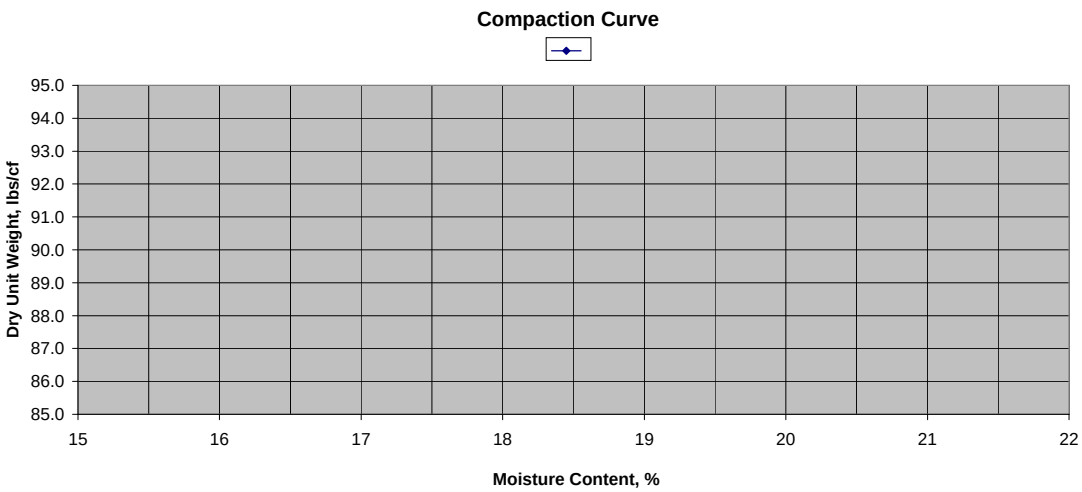
(6) When areas are found not meeting the specified in-place density, Atterberg limits, moisture content, and/or in-place organic content requirements; the Contractor shall retest, at no additional costs to the Government, after corrective measures have been applied.

US Army Corps of Engineers

Compaction - Moisture Density Relationship - ASTM D 698

Laboratory			**Test ID**		
USACE Contract Number			**Contractor**		
Project			**Date**		
Source of Material		**Feature**		**Visual Description (ASTM D 2488)**	
Station		**Offset**		**Lift Number**	
X-Coordinate		**Y-Coordinate**		**Elevation (ft)**	
Test Method		**Preparation Method**		**As-Received Moisture Content**	
Hand / Mechanical Rammer		**Specific Gravity**		**Specific Gravity Method: As Tested or Estimated**	
Percent Retained - No. 4 Sieve		**Percent Retained - 3/8" Sieve**			
Percent Retained - 3/4" Sieve		**Oversize Fraction**		**ASTM D 3718 Correction - Yes/No**	
Tested By		**Checked By**		**Submitted By**	

Test Sequence Number	**1**	**2**	**3**	**4**	**5**
a. Mold Number					
b. Mass of Mold (g)					
c. Volume of Mold (cf)					
d. Mass of Wet Soil+Mold (g)					
e. Mass of Wet Soil (g)					
f. Wet Unit Weight (lbs/cf)					
g. Container No.					
h. Mass of Tare (g)					
i. Mass of Wet Soil+Tare (g)					
j. Mass of Dry Soil+Tare (g)					
k. Mass of Water (g)					
l. Mass of Dry Soil (g)					
m. Moisture Content %					
n. Dry Unit Weight (lbs/cf)					



Test Results	
Compaction Curve Control No.	
Optimum Moisture Content (%)	
Max. Dry Unit Weight (lbs/cf)	
Classification of Sample	
Liquid And Plastic Limits	
Liquid Limit	
Plastic Limit	
Plasticity Index	
Symbol From Plastic Chart:	
% Passing 200	
% Passing No. 4	

Dry Unit Weight Scale

Min 85 **Max** 95

Moisture Content % Scale

Min 15 **Max** 22

Change Graph Scale

Remarks:

Figure 2-1

US Army Corps of Engineers

Field Density - Sand Cone Method - ASTM D 1556

Laboratory			Test ID		
USACE Contract Number			Contractor		
Project			Date		
Source of Material		Feature		Visual Description (ASTM D 2488)	
Station		Offset		Lift Number	
X-Coordinate		Y-Coordinate		Elevation (ft)	
Tested By		Checked By		Submitted By	
		Retest Of Test ID			

Calibration of Sand Cone Funnel And Plate

a. Apparatus Number	
b. Mass of Initial Apparatus with Sand (g)	
c. Mass of Apparatus (after Cone Fill) (g)	
d. Mass of Sand in Cone and Plate (g)	

Bulk Density of Sand

1. Mass of Sand + Calibration Container (g)	
2. Mass of Calibration Container (g)	
3. Mass of Sand (g)	
4. Vol. of Calibration Container (cubic cm)	
5. Bulk-Density of Sand (g/cubic cm)	

Density Determination

e. Mass of Apparatus and Sand (Initial) (g)	
f. Mass of Apparatus and Sand (Finish) (g)	
g. Mass of Sand Used (g)	
h. Mass of Sand in Cone/Plate (g) (from d)	
i. Mass of Sand in Test Hole (g)	
j. Mass of Wet Soil Removed from Hole (g)	
k. Bulk-Density Sand (g/cubic cm) (from 5)	
l. Volume of Test Hole (cubic cm)	
m. Dry Mass of Soil Removed from Hole (g)	
n. Wet Unit Weight (lbs/cf)	
o. Dry Unit Weight (lbs/cf)	

Comparison of Field Density and Maximum Density

6. Compaction Curve Control Number	
7. Optimum Moisture (Control C) (%)	
8. Max. Dry Unit Weight (Control C) (lbs/cf)	
9. Compaction Required (%)	
10. Degree of Compaction (%)	
11. Difference from Opt. Moisture (%) (+/-)	
12. Mass Retained No. 4 (g)	
13. Mass Passing No. 4 (g)	
14. Total Mass (g)	

Moisture Content

p. Moisture Content Method	
q. Container Number	
r. Mass of Container (g)	
s. Mass of Wet Sample + Container (g)	
t. Mass of Dry Sample + Container (g)	
u. Mass of Water (g)	
v. Mass of Dry Sample (g)	
w. Moisture Content (%)	

Remarks:

Figure 2-3

US Army Corps of Engineers

Field Density - Nuclear Method - ASTM D 6938

Laboratory			Report Number		
USACE Contract Number			Contractor		
Project			Date		
Source of Material		Feature		Visual Description (ASTM D 2488)	
Gauge Make		Gauge Model		Gauge Serial Number	
Standardization Data DS		Adjustment Data		Mode (BS - DT 50,100,150,200)	
Standardization Data MS		Moisture Test Method Used*		Correction Used for Moist. Test	
Tested By		Checked By		Submitted By	
* Identify whether by D2216, D4643, or D4959					
Test ID					
Retest of Test ID					
Station					
Offset					
Lift Number					
X-Coordinate					
Y-Coordinate					
Elevation (ft)					
a. Wet Unit Weight (lbs/cf)					
b. Dry Unit Weight (lbs/cf)					
c. Lab Moisture Content (%)					
d. Density Correction Factor					
e. Corrected Unit Weight (lbs/cf)					
f. Compaction Curve Control No.					
g. Opt. Moisture (Control C) (%)					
h. Max. Dry Unit Weight (CC)(lbs/cf)					
i. Compaction Required (%)					
j. Degree of Compaction (%)					
k. Difference-Opt. Moisture (+/-%)					
Test ID					
Retest of Test ID					
Station					
Offset					
Lift Number					
X-Coordinate					
Y-Coordinate					
Elevation (ft)					
a. Wet Unit Weight (lbs/cf)					
b. Dry Unit Weight (lbs/cf)					
c. Lab Moisture Content (%)					
d. Density Correction Factor					
e. Corrected Unit Weight (lbs/cf)					
f. Compaction Curve Control No.					
g. Opt. Moisture (Control C) (%)					
h. Max. Dry Unit Weight (CC)(lbs/cf)					
i. Compaction Required (%)					
j. Degree of Compaction (%)					
k. Difference-Opt. Moisture (+/-%)					
Remarks:					

Figure 2-4

US Army Corps of Engineers

Moisture Content Determination - ASTM D 2216 (Method B)

Laboratory			**Report Number**		
USACE Contract Number			**Contractor**		
Project			**Date**		
Source of Material		**Feature**		**Visual Description (ASTM D 2488)**	
Date / Time In Oven		**Date / Time Out of Oven**		**Oven Used**	
Tested By		**Checked By**		**Submitted By**	
Test ID					
Retest Of Test ID					
Station					
Offset					
Lift Number					
X-Coordinate					
Y-Coordinate					
Elevation (ft)					
a. Container / Lid Number					
b. Wet Soil + Tare Mass (g)					
c. Dry Soil + Tare Mass (g)					
d. Water Mass (g)					
e.Tare Mass (g)					
f. Dry Soil Mass (g)					
Moisture Content (%)					
Optimum Moisture Content (%)					
Difference from Opt. Moisture					
Test ID					
Retest Of Test ID					
Station					
Offset					
Lift Number					
X-Coordinate					
Y-Coordinate					
Elevation (ft)					
a. Container / Lid Number					
b. Wet Soil + Tare Mass (g)					
c. Dry Soil + Tare Mass (g)					
d. Water Mass (g)					
e.Tare Mass (g)					
f. Dry Soil Mass (g)					
Moisture Content (%)					
Optimum Moisture Content (%)					
Difference from Opt. Moisture					
Remarks:					

Figure 2-5

US Army Corps of Engineers

Moisture Content Determination - ASTM D 4643

Laboratory			Report Number		
USACE Contract Number			Contractor		
Project			Date		
Source of Material		Feature		Visual Description (ASTM D 2488)	
Microwave Oven Used					
Tested By		Checked By		Submitted By	

Test ID					
Retest Of Test ID					
Station					
Offset					
Lift Number					
X-Coordinate					
Y-Coordinate					
Elevation (ft)					
a. Container / Lid Number					
b. Wet Soil+Tare (Initial) (g)					
Incremental Measurement: c. After 3 min (Soil+Tare)(g)					
Incremental Measurement: d. Plus 1 min. (Soil+Tare)(g)					
Incremental Measurement: e. Plus 1 min. (Soil+Tare)(g)					
Incremental Measurement: f. Plus 1 min. (Soil+Tare)(g)					
Incremental Measurement: g. Plus 1 min. (Soil+Tare)(g)					
Incremental Measurement: h. Plus 1 min. (Soil+Tare)(g)					
i. Dry Soil+Tare (Final) (g)					
j. Water Mass (g) (b-i)					
k. Tare Mass (g)					
l. Dry Soil Mass (g) (i-k)					
Moisture Content(%)((j/l) x 100))					
Optimum Moisture Content (%)					
Difference From Opt. Moisture					

Test ID					
Retest Of Test ID					
Station					
Offset					
Lift Number					
X-Coordinate					
Y-Coordinate					
Elevation (ft)					
a. Container / Lid Number					
b. Wet Soil+Tare (Initial) (g)					
Incremental Measurement: c. After 3 min (Soil+Tare)(g)					
Incremental Measurement: d. Plus 1 min. (Soil+Tare)(g)					
Incremental Measurement: e. Plus 1 min. (Soil+Tare)(g)					
Incremental Measurement: f. Plus 1 min. (Soil+Tare)(g)					
Incremental Measurement: g. Plus 1 min. (Soil+Tare)(g)					
Incremental Measurement: h. Plus 1 min. (Soil+Tare)(g)					
i. Dry Soil+Tare (Final) (g)					
j. Water Mass (g) (b-i)					
k. Tare Mass (g)					
l. Dry Soil Mass (g) (i-k)					
Moisture Content(%)((j/l) x 100))					
Optimum Moisture Content (%)					
Difference From Opt. Moisture					
Remarks:					

Figure 2-6

US Army Corps of Engineers

Moisture, Ash, and Organic Content Determination - ASTM D 2974 (Method C)

Laboratory			Report Number		
USACE Contract Number			Contractor		
Project			Date		
Source of Material		Feature			
Furnace Temperature		Furnace Used		Visual Description (ASTM D 2488)	
Tested By		Checked By		Submitted By	

Test ID					
Station					
Offset					
Lift Number					
X-Coordinate					
Y-Coordinate					
Elevation (ft)					
a. Ash Dish Container Number					
b. Oven Dried Soil + Tare Mass (g)					
c. Ash Dish Tare Mass (g)					
d. Dried Soil Mass (g)					
e. Ashed Soil+Tare Mass (g)					
f. Ashed Soil Mass (g)					
g. Ash Content (%)					
h. Organic Matter (%)					
i. Max. Allow. Organic Matter (%)					
Moisture Content					
Test ID					
Station					
Offset					
Lift Number					
X-Coordinate					
Y-Coordinate					
Elevation (ft)					
a. Ash Dish Container Number					
b. Oven Dried Soil + Tare Mass (g)					
c. Ash Dish Tare Mass (g)					
d. Dried Soil Mass (g)					
e. Ashed Soil+Tare Mass (g)					
f. Ashed Soil Mass (g)					
g. Ash Content (%)					
h. Organic Matter (%)					
i. Max. Allow. Organic Matter (%)					
Moisture Content					
Remarks:					

Figure 2-7

US Army Corps of Engineers

Unified Soil Classification System - ASTM D 2487

Laboratory				Report ID			
USACE Contract no.				Contractor			
Project				Sample Date			
Testing Technician(s):			Checked by:			Submitted by:	
Test ID							
Source of material							
Station							
Offset							
Lift No							
X-Coor							
Y-Coor							
Feature							
Elevation							
Visual Description							
Est amt. ret. on #40 (%)							
Sample Air Dried?							
Liquid Limit (ASTM D 4318)							
Test Sequence 1							
a. Container Number							
b. Wet Soil + Tare Mass (g)							
c. Dry Soil + Tare Mass (g)							
d. Water Mass (g)							
e. Tare Mass (g)							
f. Dry Soil Mass (g)							
g. Moisture Content (%)							
Test Sequence 2							
a. Container Number							
b. Wet Soil + Tare Mass (g)							
c. Dry Soil + Tare Mass (g)							
d. Water Mass (g)							
e. Tare Mass (g)							
f. Dry Soil Mass (g)							
g. Moisture Content (%)							
Plastic Limit (ASTM D 4318)							
Test Sequence 1							
i. Container Number							
j. Wet Soil + Tare Mass (g)							
k. Dry Soil + Tare mass (g)							
l. Water Mass (g)							
m. Tare Mass (g)							
n. Dry Soil Mass (g)							
o. Moisture Content (%)							
Test Sequence 2							
i. Container Number							
j. Wet Soil + Tare Mass (g)							
k. Dry Soil + Tare mass (g)							
l. Water Mass (g)							
m. Tare Mass (g)							
n. Dry Soil Mass (g)							
o. Moisture Content (%)							
Liquid Limit (%)							
Plastic Limit (%)							
Plasticity Index (%)							
Gravel (#4) retained (%)							
Sand (#200) retained (%)							
Fines (minus #200) (%)							
Group Symbol							
Group Name							
Remarks:							

Figure 2-8

US Army Corps of Engineers

Sieve Analysis - ASTM C 117 and ASTM C 136

Laboratory			Test ID		
USACE Contract Number			Contractor		
Project			Date		
Source of Material		Feature		Visual Description (ASTM D 2488)	
Station		Offset		Lift Number	
X-Coordinate		Y-Coordinate		Elevation (ft)	
Tested By		Checked By		Submitted By	

Materials Finer than No. 200 Sieve - ASTM C 117 (Procedure A)

Original Dry Mass of Sample (g)	
Dry Mass of Sample after Washing (g)	
Material Finer than No. 200 Sieve by Washing (%)	

Sieve Analysis - ASTM C 136

Mass of Sample (g)		Mass of Material>No.4 Sieve(g)		USCS Group Name / Symbol	

Sieve Designations		Mass Retained (g)	Percent Retained		Percent Finer by Mass (%)
Standard	Alternative		Partial	Total	
75	3				
50	2				
37.5	1 - 1/2				
25.0	1				
19.0	3/4				
12.5	1/2				
9.5	3/8				
4.75	No. 4				
Pan					
2.36	No. 8				
2.00	No. 10				
1.18	No. 16				
0.850	No. 20				
0.600	No. 30				
0.425	No. 40				
0.300	No. 50				
0.250	No. 60				
0.150	No. 100				
0.106	No. 140				
0.075	No. 200				
Pan					

Remarks:	

Figure 2-9

Chapter 3

Concrete

3-1. Scope. This chapter prescribes methods and procedures for the testing of concrete and concrete aggregates. This section does not supersede contract documents.

3-2. Samples. Concrete samples shall be secured in accordance with ASTM C 172. Concrete aggregates shall be sampled in accordance with ASTM D 75

3-3. Typical Test Requirements. Test requirements specified in the contracts documents may be more stringent than those listed below in Table 3-1. Appropriate report forms are shown at the end of this chapter. All test data will be entered in the CEMVN material testing database. Acceptable test values are contained in the contract documents.

Table 3-1 Test Requirements

Property	Method	Form	Frequency	Remarks
AGGREGATE, FINE				
Deleterious Substances	ASTM C 33	AF	1 per week	When COR requires
Fineness Modulus	CRD-C 104	AF	1 per shift when concrete plant is operating	Calculation based on gradation test results
Gradation	ASTM C 136	AF	1 per shift when concrete plant is operating	Tests selected randomly
Moisture content	ASTM C 566	AF	If moisture meter is working properly, 2 per week to verify	Tests selected randomly
			If moisture meter is not working, 4 every 8 hrs of mixing plant operation	
			Additional tests if slump is out of control or variability is excessive	

Table 3-1 Test Requirements (continued)

Property	Method	Form	Frequency	Remarks
AGGREGATE, COARSE				
Deleterious Substances	ASTM C 33	Eng Form 6011-R	1 per week	When COR requires
Gradation	ASTM C 136	Eng Form 6011-R	1 per shift when concrete plant is operating	Tests selected randomly for each aggregate size
Moisture Content	ASTM C 566	Eng Form 6011-R	2 per week	Tests selected randomly for each aggregate size
			When two consecutive readings for smallest size differ by more than 1.0 percent, frequency of testing shall be increased to 4 every 8 hours until the difference falls below 1.0 percent	
CONCRETE				
Air Content	ASTM C 231	MVN 835-R CF	1 every time concrete cylinders are molded	
			plus two additional during each 8 hours of concrete production	On randomly selected batches for each separate concrete mix produced
			Additional tests if workability variation is excessive	
Compression Cylinders (for acceptance testing)	ASTM C 31 ASTM C 39	MVN 835-R CF	1 set of 3 cylinders for each increment or fraction of 150 cubic yards placed during every 8-hour shift	On randomly selected batches for each separate concrete mix produced Cure in accordance with paragraph 10.2 of ASTM C 31
Compression Cylinders (for quality control)	ASTM C 31 ASTM C 39	MVN 835-R CF	1 set of 4 cylinders per day (6 if 90-day strengths are specified)	On randomly selected batches for each separate concrete mix produced Cure in accordance with paragraph 10.2 of ASTM C 31
			Additional sets when mix proportions change or low strengths are detected	

Table 3-1 Test Requirements (continued)

Property	Method	Form	Frequency	Remarks
Compression Cylinders (for form stripping, putting concrete into service, or other purposes indicated in paragraph 4.3 of ASTM C 31)	ASTM C 31 ASTM C 39	MVN 835-R	1 set of multiple pairs of cylinders per item to be evaluated	Cure in accordance with paragraph 10.2 of ASTM C 31
Slump	ASTM C 143	MVN 835-R CF	1 every time concrete cylinders are molded	
			plus 4 additional during each 8 hours of concrete production	On randomly selected batches for each separate concrete mix produced
			Additional tests if workability variation is excessive	
Temperature	ASTM C 1064	MVN 835-R CF	1 every time concrete cylinders are molded	
			Additional readings when temperature is near or out of specified limits	

US Army Corps of Engineers

Concrete Compression Test Specimen Data

Laboratory		Test ID	
USACE Contract Number		Contractor	
Project Name		Test Date	

Concrete Supplier		Description			
Tested By		Mix Designation			
Specified Strength		Placement Location			
Specified (W/C+P)		X-Coordinate		Y-Coordinate	

Field Water (gal)		Sample Obtained From		Slump (in)		Air Content		Cement (C) lbs		Pozzolan (P) lbs		
Fine Ag Water		Coarse Ag Water		Batch		Ice		Field		Total Water		lbs
Time Batched		Time Molded		Molded By		Temps: Air (F)		Concrete (F)		W/(C+P) act		
Time cured in water tank on job site at 73.4 plus or minus 3 degrees F after intial curing hrs								Date delivered to lab				
Delivered by		COE		A-E		Contractor		Cushioning method		Date received		

Coarse Aggregate NMS (in)	Size/ Grade	Pit/ Quarry Name	Aggregate Batch Weight (lbs)	Aggregate Absorption (Percent)	Aggregate Moisture (Percent)	Excess Moisture (lbs)
Fine Aggregate						

Speciman Marking	Test At (Days)	Date to be Tested	Tested At (Days)	Tested By	Height (in)	Diameter (in)	Area (sq in)	Total Load (lbs)	Break Type	Compressive Strength (psi)

Figure 3-1

INSTRUCTIONS

Mixing: (Select one) Central - Batched and mixed at an offsite plant
Job - Batched and mixed at a temporary onsite plant
Shrink - Batched and partially mixed at a central plant and final mixed in a transit vehicle
Transit - Mixed totally in a transit vehicle

Approved W/(C+P+S): Water to Cementitious Materials ratio, by weight. Use the value given in the approved mix design.

Cement (C): Total weight from batch ticket in pounds per batch for concrete used to prepare cylinders
ASTM (C 150) **Type**: For example- I, IA, I(PM), I(MH), II, Ill, etc

Pozzolan (P): Total weight from batch plant ticket in pounds per batch concrete used to prepare cylinders
ASTM (C 618**) Class**: C, F or N

Slag (S): Total weight from batch plant ticket in pounds per batch concrete used to prepare cylinders
ASTM (C 989**) Grade**: 100 or 120

A-E-A: Air Entraining Admixture quantity in liquid ounces per batch concrete used to prepare cylinders

W-R-A: Water Reducing Admixture quantity in liquid ounces per batch concrete used to prepare cylinders

Coarse Aggregate NMS: Nominal Maximum Size as defined in ACI 116
Size/Grade (Coarse): ASTM C 33 aggregate size number or LDOTD (LSSRB 1003.02) aggregate grade designation
Size/Grade (Fine): Simply indicate ASTM or LSSRB
Batch Weight: Aggregate weight (including absorbed and surface moisture) from batch ticket in pounds per batch
Aggregate Absorption: Amount of water needed to bring the aggregate from a dry condition to a Saturated Surface Dry (SSD) condition (see ASTM C 127 or ASTM C 128). Usually obtained from the batch plant or aggregate source
Aggregate Moisture: Indicate the total percent (including absorbed and surface moisture) when batched.
Excess Moisture (lbs): Can be a negative number calculated from the following equation

$$\text{Excess Moisture} = \frac{\text{Batch Weight (\% Moisture - \% Absorption) / 100}}{1 + (\text{\% Moisture} / 100)}$$

Field Water: Total gallons of water per batch added at placement site

Sample Obtained from: Indicate chute, belt, pump discharge, etc.

Total Water: The sum of the following in pounds
Field: Total water added in the field in pounds per batch (convert from gallons to pounds using 8.33 lbs per gallon)
Batch: Water added at the batch plant (from batch ticket) in pounds per batch
Ice: Total ice added at the batch plant or field in pounds per batch
Excess Ag: Water on all aggregates in excess of SSD, determined by summing the Excess Moisture (lbs) column

W/(C+P+S): Actual Water to Cementitious Materials ratio, by weight

Initial cylinder curing method: Process/equipment used to maintain the required moisture and temperature per ASTM C 31

Cushioning Method: Steps taken to protect the cylinders during transport (see ASTM C 31)

QC Representative: Please print

Specimen Marking: Use the same prefix designation for companion cylinders. Record only one companion cylinder set per form. Do not scratch marking into concrete.

Test At: Indicate the number of days in which the cylinder needs to be tested.

Height, Diameter and **Break Type**: Per ASTM C 39

Figure 3-2

US Army Corps of Engineers

Aggregate Data Sheet

Laboratory				Test ID	
USACE Contract Number				Contractor	
Project					
Concrete Supplier				Description	
Test Date					
Tested By		Checked By		Submitted By	

Grading (CRD-C 103) (Cum. % Passing):						Test Results		3-6"	1 1/2- 3	3/4- 1 1/7	# 4- 1 1/4	Fine Agg.
Sieve	3-6"	1 1/2- 3"	3/4- 1 1/7	#4- 3/4"	Fine AGG.							
6 in						Bulk SP GR, S.S.D. (CRD-C 107,108)						
5 in						Absorption, % (CRD-C 107,108):						
4 in						Organic Impurities, Fig. No. (CRD-C 121)						
3 in						Soft Particles, % (CRD-C 130)						
2 1/2 in						% Lighter Than SP GR (CRD-C 122)						
2 in						% Flat and Elongated (CRD-C 119, 120)						
1 1/2 in						WT AV % Loss, 5 Cyc Mg504 (CRD-C 115)						
1 in						L.A. Abrasion Loss, % (CRD-C 117, 145) Grading						
3/4 in						Unit WT. LB/CU FT (CRD-C 106):						
1/2 in						Friable Particles, % (CRD-C 142)						
3/8 in						Spec Heat, BTU/ LB/DEG F. (CRD-C 124)						
No. 4						Reactivity with NoOH (CRD-C 128):	5c, mM/L					
No. 8							19c, mM/L					
No. 16												
No. 30						Mortar-Making Properties (CRD-C 116)	Type	Cement Ratio	Days	%	Days	%
No. 50												
No. 100												
No. 200						Linear Thermal Expansion, Millionths/ DEG F. (CRD-C 125,126):						
-200(a)						Rock Type		Parallel	Across	On	Average	
F.M. (b)												
(a) CRD-C 106	(b) CRD-C 104											

Mortar:											
Mortar- Bar Expansion AT 100F, % (CRD-C 123):			Fine Aggregate				Coarse Aggregate				
			2 mo.	6 mo.	9 mo.	12 mo.	3 mo.	5 mo.	9mo.	12mo.	
Low- Alk. Cement:		% N62O Equivalent:									
High- Alk. Cement:		% N62O Equivalent:									
Soundness in Concrete (CRD-C 40, 114):								F&T	HW- CD	HD-CW	
Fine AGG.		Coarse AGG			DFE308						
Fine AGG.		Coarse AGG			DFE308						

Petrographic Data (CRD-C 127) :

Remarks:

Figure 3-3

US Army Corps of Engineers

Concrete Field Data

Laboratory		Test ID	
USACE Contract Number		Contractor	
Project Name		Test Date	

Concrete Supplier		Mix Number		Description	
Placement Location		Specified Strength		Air %	
Unit Weight (pcf)		Slump (Inches)		Temp Limit(s) Degrees F	
Tested By		X-Coordinate		Y-Coordinate	
Remarks					

Test No	Truck No	Batch Ticket No	Batch Size (CY)	Cum Batch Sizes (cy)	Time Batched	Time Started Discharge	Slump At Arrival (in)	Field Water Added (gal)	Slump After Water (in)	Unit Weight (pcf)	Air Content (%)	Temperature		Cylinder Set Prefix No	No. In Set
												Ambient	Concrete		
1															
2															
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															
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30															

Figure 3-4

Chapter 4

Welding

4.1. Scope. This Section specifies the weld testing requirements for Group 1 and Group 2 carbon steels as defined by AWS D1.1, Table 3.1 and their ASTM A709 counterparts. Welding of sheet metal, reinforcement bars, castings, stainless steel, aluminum and other non ferrous metals are not included in this document and should reference the appropriate AWS or ASME Code.

4.2. Definitions.

a. Fracture Critical Welds. Fracture critical welds as defined by ER 1110-2-8157 are members or member components are tension members or tension components of bending members (including those subject to reversal of stress), the failure of which would be expected to result in collapse of the hydraulic steel structure. The designation "FCM" shall mean fracture critical member or member component. Members and components that are not subject to tensile stress under any condition of live load shall not be defined as fracture critical. FCMs, in general, are dewatering components (needle girders, bulkheads, needles), lifting eyes, or other tension members. This includes any members welded to these members as cracks could propagate to these members and cause failures also. These welds should either be shown on the drawings or called out in the specifications. Tubular welds are not applicable to AWS D1.5. AWS D1.5, Section 12 is the applicable code for these welds.

b. Other Welds. These welds are the remaining welds that are not considered Fracture Critical Welds. AWS D1.1 is the applicable code for these welds.

4.3. Testing Personnel.

a. Visual Inspection. Visual inspection shall be performed by Certified Welding Inspectors (CWI) that are qualified and certified in accordance with the provisions of AWS QC1. Verification of documentation may be obtained from the AWS web site. Note: Certification number is required for this verification.

b. Nondestructive Testing Technicians. All ASNT Level III personal shall be qualified in accordance with ASNT CP-189. Only individuals qualified for NDT Level II or individuals qualified for Level I and working under the direct supervision of a Level II shall perform nondestructive testing. Level I and Level II personnel shall qualified in accordance with either ASNT CP-189 or ASNT SNT-TC-1A. Level III NDT Inspectors shall posses a currently valid ASNT Level III certificate in each of the processes they are qualifying inspectors to. Copies of the certifications, including the Level III NDT Technician that certified the Level I and Level II Technicians shall be included in the submittals. Verification of Level III documentation may be obtained from the ASNT web site. Note: Either Certification number or name is required for this verification.

4.4. Visual Inspection Requirements. Visual inspection of welds shall conform to the requirements of AWS D1.1, Section 6, or AWS D1.5 Section 12, as applicable.

4.5. Nondestructive Testing Requirements.

a. Ultrasonic Testing. Ultrasonic testing of welds shall conform to the requirements of AWS D1.1, Section 6, Part F or AWS D1.5 Subsection 12.16, as applicable.

b. Radiographic Testing. Radiographic testing of welds shall conform to the requirements of AWS D1.1, Section 6, Part E or AWS D1.5 Subsection 12.16, as applicable. Only film types designated as "fine grain" or "extra fine" shall be employed.

c. Magnetic Particle Inspection. Magnetic particle inspection of welds shall conform to the applicable provisions of ASTM E 709 or AWS D1.5 Subsection 12.16, as applicable and in addition all magnetic particle inspections of welds shall be made using the Wet Contrasting Black on White Method.

4.6. Acceptance Criteria.

a. Visual and Magnetic Particle Testing. Welds shall be unacceptable if shown to have defects prohibited by AWS D 1.1/D 1.1M, Section 6, Part C. Visual and magnetic particle testing acceptance criteria shall be for the applicable criteria for either "Cyclically Loaded Nontubular Connections" or "Tubular Connections" per AWS D 1.1/D 1.1M, Table 6.1. Fracture critical welds shall be unacceptable if shown to have defects prohibited by AWS D 1.5/D 1.5M, Section 12. All welds shall be assumed in tension for the acceptance criteria for visual and the appropriate nondestructive testing method.

b. Ultrasonic Testing. Ultrasonic acceptance criteria shall be the applicable criteria for either "Cyclically Loaded Nontubular Connections" or "Tubular Connections, Class R". Fracture critical welds shall be unacceptable if shown to have defects prohibited by AWS D 1.5/D 1.5M, Section 12. All welds shall be assumed in tension for the acceptance criteria for visual and the appropriate nondestructive testing method.

c. Radiographic Testing. Radiographic acceptance criteria shall be the applicable criteria for either "Cyclically Loaded Nontubular Connections (Tensile Stress)" or "Tubular Connections". Fracture critical welds shall be unacceptable if shown to have defects prohibited by AWS D 1.5/D 1.5M, Section 12. All welds shall be assumed in tension for the acceptance criteria for visual and the appropriate nondestructive testing method.

4.7. Frequency of Testing. The frequency specified is the minimum required. The design engineer shall determine the required frequency and include this information in the specifications and/or drawings. The design engineer shall also specify the locations of radiographic testing.

a. Visual Inspection. All welds shall be visually inspected by a CWI to insure compliance with the requirements of the applicable AWS Welding Code. Prior to any welding, a CWI shall visually inspect the preparation of material for welding to assure compliance with the applicable AWS Code (D1.1 or D1.5) and approved WPS. The CWI shall also perform VT inspection throughout the welding process to assure compliance with the applicable AWS Code (D1.1 or D1.5) and approved WPS. All completed welds shall be cleaned free of oxide, flux, scale, or other foreign matter before inspection.

b. Full Penetration Welds. Full penetration welds shall be examined by the Contractor using ultrasonic testing (UT) procedures described above. In additional to the full penetration welds specified for testing, a randomly chosen twenty-five percent (25%) of the remaining full penetration welds shall be ultrasonically tested to ensure the quality of the procedure and process. The random testing shall include a representative sample of welds from all welders and each of the processes each welder used. The random testing shall be spread throughout the project.

c. Full Penetration Butt Splice Welds. All full penetration butt splices shall be examined using ultrasonic testing (UT) and radiographic testing (RT) procedures described above. These welds shall be defined in the specification or noted on the drawings.

d. Fillet Welds and Partial Penetration Groove Welds. Fillet welds and partial penetration groove welds shall be examined by the Contractor using magnetic particle testing (MT) procedures described above. In additional to the fillet and partial penetration welds specified for testing, a randomly chosen twenty-five percent (25%) of the remaining fillet and partial penetration welds shall be magnetic particle tested to ensure the quality of the procedure and process. The random testing shall include a representative sample of welds from all welders and each of the processes each welder used. The random testing shall be spread throughout the project.

US Army Corps of Engineers

Report Of Visual Examination Of Welds

Laboratory		Test ID	
USACE Contract Number		Test Date	
Project		Tested By	
		Checked By	
Contractor		Submitted By	

Item Number/Description	Weld Identification - Location, Type, or Size	Area Examined	Accept	Reject	Retest of Test ID (Test ID Item Number)	Comments

We, the undersigned, certify that the statements in this record are correct and that the test welds were prepared and tested in conformance with the requirements of AWS D1. 1/D1. 1M, ( ) Structural Welding Code- Steel.

Manfacturer or Contractor	
Authorized By	
Date	
Remarks	

Figure 4-1

US Army Corps of Engineers

Report Of Ultrasonic Examination Of Welds

Laboratory		**Test ID**	
USACE Contract Number		**Test Date**	
Project		**Tested By**	
		Checked By	
Contractor		**Submitted By**	

Inspection Equipment and Techniques

Procedure No.:		**Transducer Make**	
Instrument Type:		**Transducer S/N:**	
Instrument S/N:		**Transducer Frequency:**	
Wedge Angle (s):		**Transducer Diameter:**	
Date of Calibration:		**Couplant:**	
Date of Re-Calibration:		**Reference Level:**	

Item Number/Description	Weld Identification - Location, Type, or Size	Area Examined	Accept	Reject	Retest of Test ID (Test ID-Item Number)	Comments

We, the undersigned, certify that the statements in this record are correct and that the test welds were prepared and tested in conformance with the requirements of AWS D1. 1/D1. 1M, ( ) Structural Welding Code- Steel.

Inspector		**Manfacturer or Contractor**	
Level		**Authorized By**	
		Date	
Remarks			

Figure 4-2

US Army Corps of Engineers

Report Of Magnetic- Particle Examination Of Welds

Laboratory		Test ID	
USACE Contract Number		Test Date	
Project		Tested By	
		Checked By	
Contractor		Submitted By	

Quantity Tested		Total Accepted		Total Rejected		Procedure Number	

Item Number/Description	Weld Identification	Area Examined	Accept	Reject	Retest of Test ID (Test ID-Item Number)	Comments

Pre- Examination

Surface Preparation	

Equipment

Instrument Make				Model		Serial No.	
Date of Calibration		Re-calibration date		Calibration block weight		Serial No.	

Method of Inspection

Dry		Wet		Visible		Fluorescent			

How Media Applied

Residual		Continuous		True Continuous			Particle/Bath		
AC		DC		Half Wave					
Prods		Yoke		Cable Wrap			Other		
Direction for Field:		Circular		Longitudinal					
Strength of Field:									
(Ampere turns, field density, magnetizing force, number, and duration of force application)									

Post Examination

Demagnetizing Technique (if required)			
Cleaning (if required)		Marking Method	

We, the undersigned, certify that the statements in this record are correct and that the test welds were prepared and tested in conformance with the requirements of AWS D1.1/D1.1M, ( ) Structural Welding Code- Steel

Inspector		Manufacturer or Contractor	
Level		Authorized By	
		Date	
Remarks			

Figure 4-3

US Army Corps of Engineers

Report Of Liquid Penetrant Examination Of Welds

Laboratory		Test ID	
USACE Contract Number		Test Date	
Project		Tested By	
		Checked By	
Contractor		Submitted By	

Inspection Equipment and Techniques

Procedure No.:		Cleaner:	
Manufacturer:		Penetrant:	
Developer:		Penetrant Dwell Time:	
Development Time:		Emulsifier:	
Black Light Manufacturer:		Emulsification Time:	
Black Light S/N:			

Item Number/Description	Weld Identification - Location, Type, or Size	Area Examined	Accept	Reject	Retest of Test ID (Test ID - Item No)	Comments

We, the undersigned, certify that the statements in this record are correct and that the test welds were prepared and tested in conformance with the requirements of AWS D1. 1/D1. 1M, ( ) Structural Welding Code- Steel.

Inspector		Manfacturer or Contractor	
Level		Authorized By	
		Date	
Remarks			

Figure 4-4

US Army Corps of Engineers

Report Of Radiographic Examination Of Welds

Laboratory		Test ID	
USACE Contract Number		Test Date	
Project		Tested By	
		Checked By	
Contractor		Submitted By	

Item Number/Description	Weld Identification	Area Examined	Accept	Reject	Retest of Test ID (Test ID-Item Number)	Comments

We, the undersigned, certify that the statements in this record are correct and that the test welds were prepared and tested in conformance with the requirements of AWS D1. 1/D1. 1M, ( ) Structural Welding Code- Steel.

Radiographer(s)		Manfacturer or Contractor	
Interpreter		Authorized By	
		Date	
Remarks			

Figure 4-5

APPENDIX A

Testing Database

Filling Out Test Form Templates

Forms are located at:

ftp://ftp.usace.army.mil/pub/mvn/MVNQAQCDataCollection/

Please go there and download forms each time you have test data to report. This ensures that you have the latest version of the templates, as there are periodic updates or revisions. Failure to do so may prevent the data from being loaded into the QAQC database, the form will be rejected and you will have to resubmit it on the proper form.

Below are guidelines on filling out the various forms. Some of the items on the form are self-explanatory and not mentioned here. If you have any questions about a certain item, please contact Susan or Regmar (emails and phones below). On all forms, the Test Date is the date the test was performed in the field, or the sample was taken in the field for lab testing, not the date the test was conducted in the lab. Examples of all the forms are attached as an appendix to this guide.

Please use the Remarks section on each form for any comments that pertain to the tests performed. Comments may include items such as: meet specs, meet specs of xx% (for different types of material, say embankment is 90% compaction and trench is only 85%), in-situ material, for information only, etc. There is no such thing as too much detail or information.

This reporting and submittal system is to be used for all Corps of Engineers work in the MVN division, including but not limited to, HPO, PRO, and Civil Works projects.

ASTM D 698:

Test ID: Usually the test report has a report number and a sample number, lab number or ID, or some type of code that is a unique identifier. If your usual method of reporting is Report 1, sample 1; or Report 1, Curve 2, or P032008-A, P030208-B, etc., then you would enter something like 1-1, 1-2, P032008-A. Or you can start with the initials of your lab, then the number or code you use, like AAI-1, DTI-2. Much of this depends on your system of identifying each test sample.

Under the Test Results section, bottom right, there are two items to describe, Compaction Curve Control No. and the four boxes to change the scale of the graph.

Compaction Curve Control No. This is the unique identifier for the specific test results reported here, namely the Optimum Moisture and Maximum Dry Unit Weight, the two items that are used in nuclear density and sand cone testing. Each curve and its results will have a unique identity, Curve 1, Curve 2, Sample 1, Sample 3, L08-12345, etc. Many times it may be the same as the Test ID (above). Again it will greatly depend on your system of identification. If you number every test sequentially, then it would be something like Curve 1, Curve 2, etc. But if you restart the number sequence on each report, then you **must** include the report number with the test

number, like 1-1, 1-2, AAI-2-1, AAI-2-2, etc. Otherwise there will be multiple number 1's, 2's, etc. This CCCN is entered on the Nuclear Density and Sand Cone forms so that when test data is loaded into the database, each test is linked to a compaction curve and it is easier to see what material was used in the different places on the levee.

Compaction Curve Graph: You are able to change the x- and y- scales of the graph to match the range of your data. Just enter the high and low ranges and then click on the 'Change Graph Scale' box.

ASTM D 2216 and 4643:

Report Number: The number or identifier you use, 1, 2, 3, A, B, C, etc. One thing to consider, if there is more than one lab providing test services on a contract, then there would be multiple report 1's, 2's, etc. If there is more than one lab, then you should put the first initials of your lab, like AAI, DTI, ATI, PSI, etc. and the report number. Examples would be AAI-1, DTI-2, ATI-3, PSI-4. If you want to use this for all your reports, that is fine also. You would repeat this same system on the forms for ASMT D 2974 and 2487, matching the test samples and forms.

Test ID: This is how you identify each sample tested. Some labs use 1, 2, 3 and start over with each report, others have a unique lab number for each sample. Again, it depends on your system. This is the second part of the unique record ID created by combining the Report Number and the Test ID. The database uses the combination of the Report Number and Test ID for each record. So if your report has tests on two samples, the database will record them as DTI-1-1, then DTI-1-2. So they are identified as tests from Delta, report 1, tests 1 and 2.

Optimum Moisture Content: The optimum moisture, as determined from the Proctor test for the material being tested. USACE specs now require the use of only microwave or oven moisture so you will also enter the Difference from Optimum Moisture on this form.

Once the moisture content is determined, then the dry density of the tested material will be recalculated and compaction determined.

ASTM D 2974:

Same as for ASTM D 2216, above. For Maximum Allowable Organic Matter, the contractor will provide this, based on the contract specifications.

ASTM D 2487:

Since these tests are done in conjunction with, and relate to, the above tests, the Test ID on this report must match the Report Number-Test ID on each of the above. So, if there are 3 samples and each had these three tests, each record is identified as, for example, DTI-1-1, DTI-1-2, DTI-1-3. Or 16-L08-12345, 16-L08-12346, etc.

ASTM C 117 and C 136:

Same as ASTM D 2487, above.

ASTM D 1556:

Test ID is a combination of the Report Number and the test number. Usually I've only seen one test per report, so you could use just the report number, 1, 2, 3, etc. But if you have two or more tests in the same report, then you would put 1-1, 1-2, 1-3. Again, it would probably be good to use your lab's initials if there is more than one lab working on the contract.

On the right side, middle, in the box "Comparison of Field Density and Maximum Density", the first box is the Compaction Curve Control Number, described under ASTM D 698, above. This is where you enter the unique identifier for the curve that is being used for the tested material.

ASTM D 6938:

Report number is just the number, preceded by the initials of the lab, DTI 1, AAI 2, etc.

Test ID: Since each density test will have a corresponding soils test, the ID should match the ID for its' respective test. So if the Moisture, Organic, and Atterberg ID is 10-L08-12345, then the density test should also be 10-L08-12345.

This is the other form where the Compaction Curve Control Number is entered, it is located on line item 'f', and is entered for each test. Sometimes all the tests for that day and report are the same material, other times they are not. This form allows you to have tests with different Proctors on the same sheet.

Retest of Test ID: this item is also on forms 2216, 4643, and 1556. Whenever there is a failed test, the area must be reworked and retested until it passes. The ID of the **first** failed test is reported in this box for each test that is a retest of that area until a passing test is obtained. Most times the first retest will pass and clear the failed test, but sometimes I've seen two or more retests fail before a passing test is obtained. As long as each test is linked back to the first failed test, then it will not show up as unresolved in the database and our reports. The item that goes in here is the combination of the Report Number and the Test ID in that report that was the original failed test. It is also recommended that you add a comment in the "Remarks" box at the bottom of the report to identify the retest and the failed test. This is especially important if there is quite a bit of time between the first failed test and each subsequent retest.

For example, test 3 on report 1 failed. The test ID is AAI-1-3. The next time this area is tested, it is test 1 on report 4. So on report 4, in the box "Retest of Test ID" under test 1, you would enter AAI-1-3 to show that this is a retest of the third test on report 1. And if the test on report 4 also fails, then the next time that area is retested, AAI-1-3 will be entered again, until a passing test is obtained. Don't worry if this seems confusing, we did this during Task Force Guardian so we will walk you through it here too.

As stated above under forms 2216 and 4643, the nuclear moisture is not to be used for control testing, only microwave or oven moisture is to be used. This is the moisture that should be reported on this form. Nuclear moisture is not to be used to calculate dry density and compaction, only the oven or microwave moisture is to be used. Therefore it is vital that the test results be reported immediately to the contractor so that they know whether to continue placing material or if the area needs to be reworked and retested.

When reporting multiple tests performed on the same day, please keep the tests in the same order on these forms. So test no. 1 at 100+00 is the same on each form, 2216, 4643, 6938, 2974, 2487, and 117-136.

Concrete Field Data:

This form was designed based on forms used by several labs. It is recommended that you fill out the header information as much as possible and print out several blank forms for the technician to take to the field to fill out. He/she can fill in the form and make a copy for the field personnel and bring their copy back to the office. Then the form would be completed on the computer and submitted just like the soils test forms.

Concrete Compression Test Specimen Data:

Again, based on current forms in use. Fill out the header information as much as possible and print out blank forms for the technician to take to the field. Leave copies with field personnel and complete form on computer after returning to office, submit like other forms. One of the issues we hope this will address is that currently, when the cylinders are sent to the COE lab, the paper work many times time lacks detailed and legible information needed to correctly log the cylinders into the concrete database. This should enable better tracking and reporting of the cylinders.

Aggregate Data Sheet:

Fill out as needed and submit like rest of forms.

Weld Testing Forms:

Should be treated as summary reports of the forms filled out by the welding inspectors and testing labs. Examples of each form are attached to this guide.

Naming and Saving the Forms

Naming the Files and Forms:

Each form template is titled by the test, ASTM D 698, etc. When you start recording your tests, you use the form name followed by the construction contract number, W912P8-0X-C-YYYY (some contracts will have a D instead of a C). If there is a task order number, that number goes behind the contract number – ASTM D 2922 **W912P8-08-C-0004 0001**. (The bold part is the number that is on the form in the USACE Contract Number box.). Then following this is a five digit number that is sequential for each type of test. Below is an example of this:

ASTM D 6938 W912P8-D-0004 0001 00001
ASTM D 6938 W912P8-D-0004 0001 00002
ASTM D 6938 W912P8-D-0004 0001 00003
ASTM D 6938 W912P8-D-0004 0001 00004
ASTM D 6938 W912P8-D-0004 0001 00005

ASTM D 2216 W912P8-D-0004 0001 00001
ASTM D 2216 W912P8-D-0004 0001 00002
ASTM D 2216 W912P8-D-0004 0001 00003

For C 117/C136, since there is only one test per form, if you have, for example, 3 tests on the same report, the last five digits would be shown as:

ASTM C 117-C136 W912P8-D-0004 0001 00001-1
ASTM C 117-C136 W912P8-D-0004 0001 00001-2
ASTM C 117-C136 W912P8-D-0004 0001 00001-3

The next time you have these tests, the numbers would be:

ASTM C 117-C136 W912P8-D-0004 0001 00002-1
ASTM C 117-C136 W912P8-D-0004 0001 00002-2
ASTM C 117-C136 W912P8-D-0004 0001 00002-3

Or you may have this:

ASTM C 117-C136 W912P8-D-0004 0001 00001
ASTM C 117-C136 W912P8-D-0004 0001 00002-1
ASTM C 117-C136 W912P8-D-0004 0001 00002-2

This would indicate that there were sieve analyses on two different reports, one on the first report, and two on the second report. Another way to think of this, you have three samples that you performed testing on, all three can be shown on one form for 2216 and one for 2974, but only one per form C 117-C136. So the files would be named like below:

ASTM D 2216 W912P8-D-0004 0001 00001
ASTM D 2974 W912P8-D-0004 0001 00001
ASTM C 117-C136 W912P8-D-0004 0001 00001-1
ASTM C 117-C136 W912P8-D-0004 0001 00001-1
ASTM C 117-C136 W912P8-D-0004 0001 00001-2

Of course, if you have one test without the others, then you just use the next number in the sequence for that test. Maybe you did some moisture tests, 2216, without organics or sieves. Then that moisture test file would be the next number in the sequence:

ASTM D 2216 W912P8-D-0004 0001 00002

Then you come back with another suite of tests, and the numbering would look like this:

ASTM D 2216 W912P8-D-0004 0001 00003
ASTM D 2974 W912P8-D-0004 0001 00002
ASTM C 117-C136 W912P8-D-0004 0001 00002

As long as the report number and test ID on the forms match up the samples tested, it is ok if the file numbers are off. All the numbering system shows us is how many of each test form there is, and if there are multiple forms in a report. Also, if you have more than 10 tests in a report for 2216, 2974, or 6938, you would show that like this:

ASTM D 6938 W912P8-D-0004 0001 00001-1
ASTM D 6938 W912P8-D-0004 0001 00001-2

And your test numbers on the second page would start with 11, 12, 13, etc, if that is the type of system you are using. Or J, K, L, or the next lab number if you use something like L08-33345. That way each test is recorded as being part of Report 1. So if you had 15 tests, they would show up as DTI-1-1 through DTI-1-15.

Finally, if there are two labs doing the same tests, but one is at the borrow pit and the other is on the levee, one will be assigned the final five digits starting with 00001, the other will start with 10001. That way when the files are placed on the ftp site, they will not overwrite other files already there.

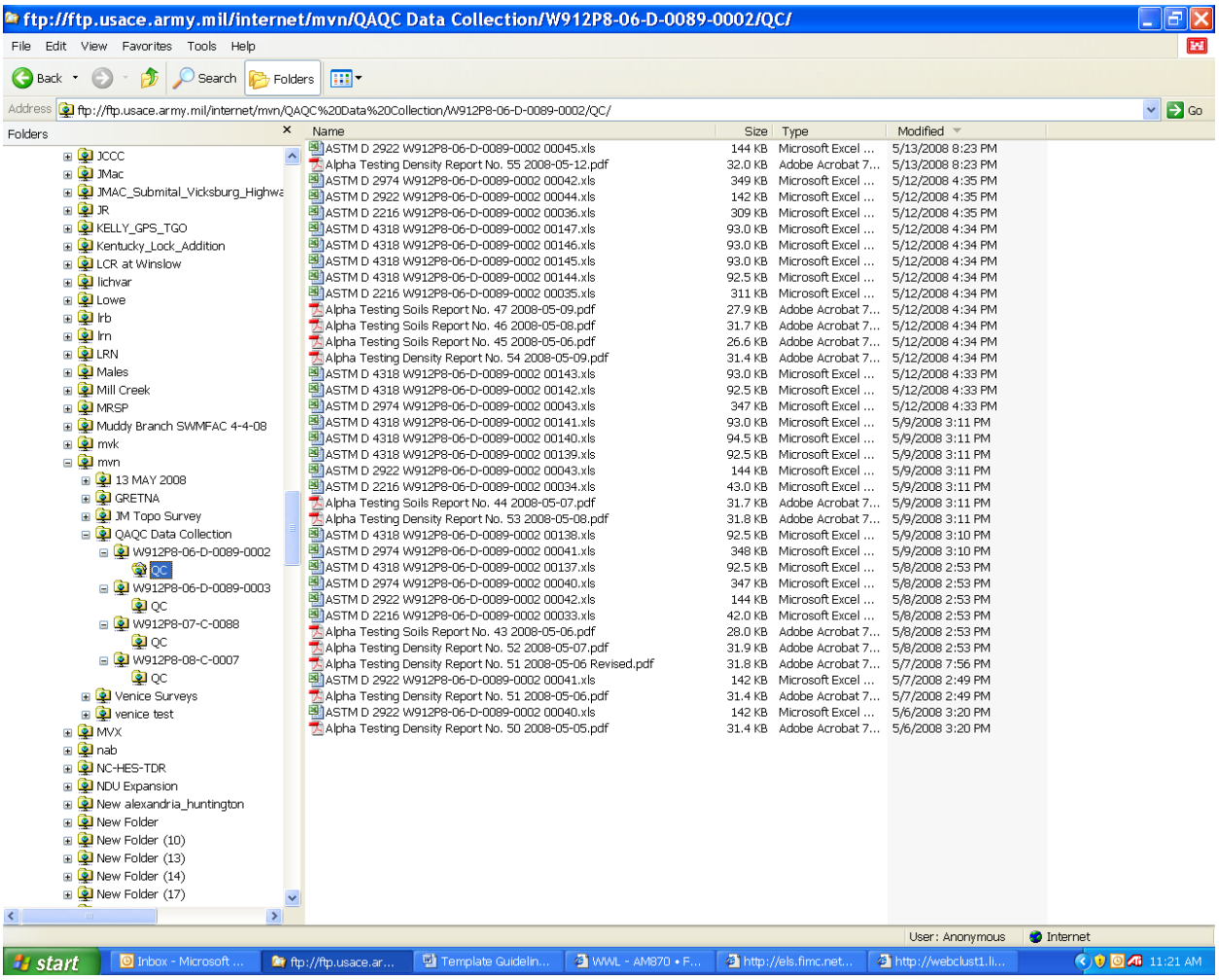
Submitting the Forms:

All forms are to be submitted electronically, per the Construction Control Manual (provided during training) and the contract specifications. Namely all test results are to be submitted within 24 hours of completion. Organics results are to be submitted within 48 hours. This is necessary since contract specifications now require lab results to confirm compliance or failure and work cannot continue in the same area until the results are submitted to the contractor. Delays in submitting test results may result in construction delays and that is to be avoided. Also

to be submitted, are .pdf copies of the testing lab's regular, standard reports. This completes the documentation record of data transfer to all parties.

To submit the forms, go to ftp://ftp.usace.army.mil/. On this root, go to File and click on Log in As, and when the box comes up, click the box "Log on anonymously", then you can go to

ftp://ftp.usace.army.mil/internet/mvn/QAQCDataCollection/



In here are folders for specific contracts. The first time you have forms to submit, it is best to make a folder on your desktop or computer, save all the completed forms to it, then drag and drop it into here. For example, the construction contract you are performing testing on is W912P8-08-C-0001 and you are the QC lab, you would have a folder named with the contract number, and then inside that folder, another folder named QC. If you are the QA lab, there should already be a folder for the contract and all you would have to do is add a QA folder. Each time you have test forms and reports, you would log on, go to the appropriate folder, and load/save your copies to the respective folder. These folders are checked daily, at least twice, and the forms are moved to the USACE network for review and uploading to the database. The

forms stay on the ftp site for approximately two weeks, then drop off so that the folders do not become cluttered.

Hopefully this covers most questions you have. If you need more information, please do not hesitate to contact us, we want this to be as effortless as possible. After doing a few forms, you'll find they are easy. We can walk you through the forms when you start filling them out in case there are any other questions or things missed. And your suggestions and feedback are welcome.

Contact information:

Susan Diehl	office 862-2159	email Susan.Diehl@usace.army.mil
Regmar Hanemann	office 862-1448	email Regmar.W.Hanemann2@usace.army.mil

Appendix

Examples of Reports

1. Soils reports

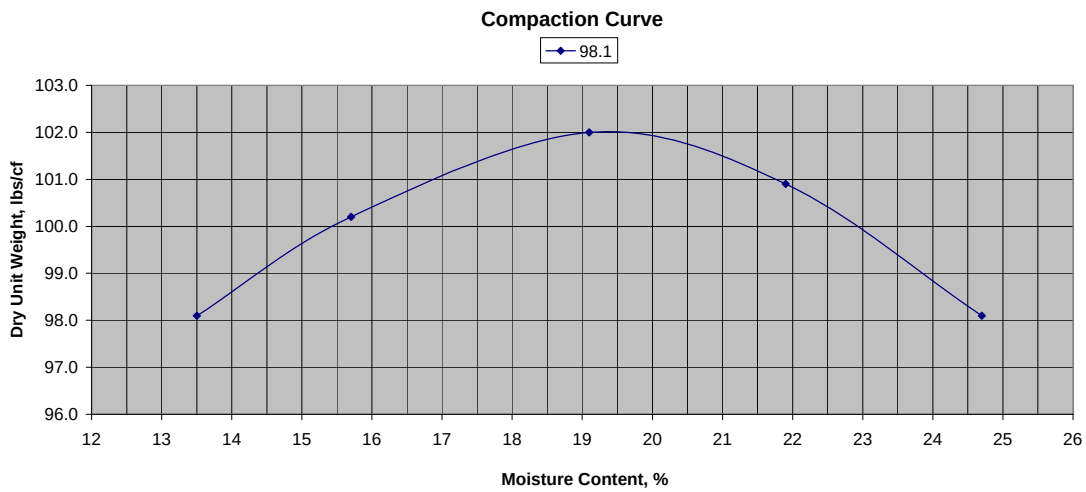
2. Concrete reports

3. Weld reports

Alpha Testing and Inspection, Inc.

Compaction - Moisture Density Relationship - ASTM D 698

Laboratory	Alpha Testing and Inspection, Inc.		Test ID	6259-89-L08-02962-Test 2	
USACE Contract Number	W912P8-06-D-0089-0003		Contractor	Merrick Construction Co.	
Project	Belle Chasse Hwy to Hero Cutoff (West)		Date	12/22/2008	
Source of Material	Borrow Pit #3	Feature	CL	Visual Description (ASTM D 2488)	Brown & Gray Clay
Station		Offset		Lift Number	
X-Coordinate		Y-Coordinate		Elevation (ft)	
Test Method	ASTM D 698	Preparation Method	Dry	As-Received Moisture Content	
Hand / Mechanical Rammer	Mechanical	Specific Gravity		Specific Gravity Method: As Tested or Estimated	
Percent Retained - No. 4 Sieve		Percent Retained - 3/8" Sieve			
Percent Retained - 3/4" Sieve		Oversize Fraction		ASTM D 3718 Correction - Yes/No	
Tested By	T. Holleman	Checked By	D. Devillier	Submitted By	L. Durnin
Test Sequence Number	1	2	3	4	5
a. Mold Number					
b. Mass of Mold (g)	2016.0	2016.0	2016.0	2016.0	2016.0
c. Volume of Mold (cf)	0.3000	0.3000	0.3000	0.3000	0.3000
d. Mass of Wet Soil+Mold (g)	3700.0	3769.0	3853.0	3875.0	3865.0
e. Mass of Wet Soil (g)	1684.0	1753.0	1837.0	1860.0	1850.0
f. Wet Unit Weight (lbs/cf)	111.3	115.9	121.5	123.0	122.3
g. Container No.	1.00	2.00	3.00	4.00	5.00
h. Mass of Tare (g)					
i. Mass of Wet Soil+Tare (g)	534.10	593.80	556.00	605.50	649.80
j. Mass of Dry Soil+Tare (g)	470.60	513.20	466.80	496.70	521.10
k. Mass of Water (g)	63.50	80.60	89.10	108.80	128.70
l. Mass of Dry Soil (g)					
m. Moisture Content %	13.5	15.7	19.1	21.9	24.7
n. Dry Unit Weight (lbs/cf)	98.1	100.2	102.0	100.9	98.1



Test Results	
Compaction Curve Control No.	L08-02962 / Test 2
Optimum Moisture Content (%)	19.1
Max. Dry Unit Weight (lbs/cf)	102.0
Classification of Sample	ASTM D 2487
Liquid And Plastic Limits	
Liquid Limit	48
Plastic Limit	19
Plasticity Index	29
Symbol From Plastic Chart:	CL
% Passing 200	
% Passing No. 4	

Dry Unit Weight Scale

Min 96 Max 103

Moisture Content % Scale

Min 12 Max 26

Change Graph Scale

Remarks: Average of Test 1 & 2 Max Dry Density 102.4 Optimum Moisture 19.4

Alpha Testing and Inspection, Inc.

Moisture Content Determination - ASTM D 2216 (Method B)

Laboratory	Alpha Testing & Inspection, Inc.		**Report Number**	6259-92	
USACE Contract Number	W912P8-06-D-0089-0003		**Contractor**	Merrick Construction Co.	
Project	Belle Chasse Hwy to Hero Cutoff (West)		**Date**	1/9/2009	
Source of Material	Jobsite	Feature	CL	Visual Description (ASTM D 2488)	Brown Clay
Date / Time In Oven	01-10-09 5:30 a.m.	Date / Time Out of Oven	01-10-09 11:30 a.m.	Oven Used	OV2
Tested By	T. Holleman	Checked By	D. Devillier	Submitted By	L. Durnin

Test ID	L09-00004	L09-00005	L09-00006	L09-00007	L09-00008
Retest Of Test ID					
Station	1169+75	1165+16	1131+91	1088+54	1084+82
Offset	0.70 P/S	8.8 F/S	15.2 P/S	30.0 P/S	28.0 P/S
Lift Number	1	1	7	5	4
X-Coordinate	N487410.84	N487674.90	N489662.53	N492241.75	N492504.32
Y-Coordinate	E3687858.16	E3688234.98	E3690899.42	E3694386.54	E3694746.88
Elevation (ft)	5.9	5.7	6.0	2.6	1.3
a. Container / Lid Number	C	97	92	A	88
b. Wet Soil + Tare Mass (g)	189.10	166.02	199.10	196.16	184.42
c. Dry Soil + Tare Mass (g)	165.38	146.87	172.35	170.20	161.81
d. Water Mass (g)	23.72	19.15	26.75	25.96	22.61
e.Tare Mass (g)	49.12	49.18	50.20	49.45	49.90
f. Dry Soil Mass (g)	116.26	97.69	122.15	120.75	111.91
Moisture Content (%)	20.40	19.60	21.90	21.50	20.20
Optimum Moisture Content (%)	18.9	18.9	18.9	18.9	18.9
Difference from Opt. Moisture	1.5	0.7	3	2.6	1.3

Test ID	L09-00009	L09-00010	L09-00011	L09-00012	
Retest Of Test ID					
Station	1079+48	1074+63	1067+74	1063+38	
Offset	28.0 P/S	25.1 P/S	19.8 P/S	39.0 P/S	
Lift Number	5	1	1	2	
X-Coordinate	N492776.55	N493070.94	N493532.04	N493868.13	
Y-Coordinate	E3695117.91	E3695500.46	E3696008.25	E3696281.10	
Elevation (ft)	1.4	1.1	0.9	0.1	
a. Container / Lid Number	X	66	93	91	
b. Wet Soil + Tare Mass (g)	210.86	194.76	192.14	172.93	
c. Dry Soil + Tare Mass (g)	184.63	167.24	166.56	150.21	
d. Water Mass (g)	26.23	27.52	25.58	22.72	
e.Tare Mass (g)	50.11	37.45	49.76	49.69	
f. Dry Soil Mass (g)	134.52	129.79	116.80	100.52	
Moisture Content (%)	19.50	21.20	21.90	22.60	
Optimum Moisture Content (%)	18.9	18.9	18.9	18.9	
Difference from Opt. Moisture	0.6	2.3	3	3.7	

Remarks:

US Army Corps of Engineers

Moisture Content Determination - ASTM D 4643

Laboratory	Ardaman		Report Number	07-L2130	
USACE Contract Number	W912P8-06-D-0086-0001		Contractor	Clark Construction	
Project	LPV 04.1 St. Charles Parish, Reaches 1A, 1B, and 2A		Date	3/18/2008	
Source of Material		Feature		Visual Description (ASTM D 2488)	
Microwave Oven Used					
Tested By	B. Singleton	Checked By		Submitted By	B. Singleton

Test ID		T119-278	T119-279			
Retest Of Test ID						
Station		104+00	112+00			
Offset		15' S crown ps area 2A	15' S crown ps area 2A			
Lift Number		4	5			
X-Coordinate						
Y-Coordinate						
Elevation (ft)						
a. Container / Lid Number		9.0	13.0			
b. Wet Soil+Tare (Initial) (g)		591.69	575.48			
Incremental Measurement	c. After 3 min (Soil+Tare)(g)	578.41	563.75			
	d. Plus 1 min. (Soil+Tare)(g)	574.70	558.14			
	e. Plus 1 min. (Soil+Tare)(g)	572.42	555.61			
	f. Plus 1 min. (Soil+Tare)(g)	571.92	554.97			
	g. Plus 1 min. (Soil+Tare)(g)	571.64	554.68			
	h. Plus 1 min. (Soil+Tare)(g)					
i. Dry Soil+Tare (Final) (g)		571.77	554.81			
j. Water Mass (g) (b-i)		19.92	20.67			
k. Tare Mass (g)		491.42	475.24			
l. Dry Soil Mass (g) (i-k)		80.35	79.57			
Moisture Content(%)((j/l) x 100))		24.8	26.0			
Optimum Moisture Content (%)		24.6	24.6			
Difference From Opt. Moisture		0.2	1.4			

Test ID						
Retest Of Test ID						
Station						
Offset						
Lift Number						
X-Coordinate						
Y-Coordinate						
Elevation (ft)						
a. Container / Lid Number						
b. Wet Soil+Tare (Initial) (g)						
Incremental Measurement	c. After 3 min (Soil+Tare)(g)					
	d. Plus 1 min. (Soil+Tare)(g)					
	e. Plus 1 min. (Soil+Tare)(g)					
	f. Plus 1 min. (Soil+Tare)(g)					
	g. Plus 1 min. (Soil+Tare)(g)					
	h. Plus 1 min. (Soil+Tare)(g)					
i. Dry Soil+Tare (Final) (g)						
j. Water Mass (g) (b-i)						
k. Tare Mass (g)						
l. Dry Soil Mass (g) (i-k)						
Moisture Content(%)((j/l) x 100))						
Optimum Moisture Content (%)						
Difference From Opt. Moisture						

Remarks:

US Army Corps of Engineers

Moisture, Ash, and Organic Content Determination - ASTM D 2974 (Method C)

Laboratory	Professional Service Industries, Inc. (PSI)		Report Number	50-1	
USACE Contract Number	W912P8-08-C-0007		Contractor	Circle, Inc.	
Project	Chalmette Loop Project, Verret to Caernarvon Levee Reach		Date	1/19/2009	
Source of Material	Job Site	Feature	CH		
Furnace Temperature	440 C	Furnace Used	06OV251	Visual Description (ASTM D 2488)	Dark Gray Clay
Tested By	Steven Kennedy	Checked By	Sreenath Reddy	Submitted By	Sreenath Reddy

Test ID	1	2	3	4	5
Station	1337+00	1347+00	1417+00	1422+00	1432+00
Offset	P/S	P/S	P/S	F/S	F/S
Lift Number	7	7	4	3	1
X-Coordinate	495532	495515	495420	495406	495381
Y-Coordinate	3753855	3752855	3745856	3745356	3744358
Elevation (ft)					
a. Ash Dish Container Number	6	11	8	12	9
b. Oven Dried Soil + Tare Mass (g)	184.27	185.75	182.20	186.97	212.49
c. Ash Dish Tare Mass (g)	134.14	135.60	132.18	136.90	162.44
d. Dried Soil Mass (g)	50.13	50.15	50.02	50.07	50.05
e. Ashed Soil+Tare Mass (g)	182.34	182.03	179.56	183.64	210.05
f. Ashed Soil Mass (g)	48.20	46.43	47.38	46.74	47.61
g. Ash Content (%)	96.15	92.58	94.72	93.35	95.12
h. Organic Matter (%)	3.85	7.42	5.28	6.65	4.88
i. Max. Allow. Organic Matter (%)	9.00	9.00	9.00	9.00	9.00
Moisture Content					

Test ID	6	7			
Station	1437+00	1442+00			
Offset	F/S	F/S			
Lift Number	1	1			
X-Coordinate	495374	495369			
Y-Coordinate	37433858	3743357			
Elevation (ft)					
a. Ash Dish Container Number	14	5			
b. Oven Dried Soil + Tare Mass (g)	177.15	201.65			
c. Ash Dish Tare Mass (g)	127.14	151.54			
d. Dried Soil Mass (g)	50.01	50.11			
e. Ashed Soil+Tare Mass (g)	174.14	199.28			
f. Ashed Soil Mass (g)	47.00	47.74			
g. Ash Content (%)	93.98	95.27			
h. Organic Matter (%)	6.02	4.73			
i. Max. Allow. Organic Matter (%)	9.00	9.00			
Moisture Content					

Remarks:

US Army Corps of Engineers

Unified Soil Classification System - ASTM D 2487

Laboratory	Eustis Engineering Services, L.L.C.			Report ID	20141-37		
USACE Contract no.	W912P8-06-D-0099			Contractor	Cycle Construction Company, LLC		
Project	Westwego Floodwall WBV-60			Sample Date	01/14/2009		
Testing Technician(s):	#1:JMP,MR.		Checked by:	CD		Submitted by:	M.SUGGS
Test ID	#1						
Source of material	NUCLEAR DENSITY TEST						
Station	13+60						
Offset	42' EAST of Wall						
Lift No	3						
X-Coor							
Y-Coor							
Feature							
Elevation							
Visual Description	G CL W/ SH FRAG, SI POCS & TR RTS						
Est amt. ret. on #40 (%)	3						
Sample Air Dried?	No						
Liquid Limit (ASTM D 4318)							
Test Sequence 1							
a. Container Number	L-1						
b. Wet Soil + Tare Mass (g)	38.99						
c. Dry Soil + Tare Mass (g)	29.39						
d. Water Mass (g)	9.60						
e. Tare Mass (g)	15.59						
f. Dry Soil Mass (g)	13.80						
g. Moisture Content (%)	69.6						
Test Sequence 2							
a. Container Number	L-17						
b. Wet Soil + Tare Mass (g)	38.87						
c. Dry Soil + Tare Mass (g)	29.33						
d. Water Mass (g)	9.54						
e. Tare Mass (g)	15.61						
f. Dry Soil Mass (g)	13.72						
g. Moisture Content (%)	69.5						
Plastic Limit (ASTM D 4318)							
Test Sequence 1							
i. Container Number	58.0						
j. Wet Soil + Tare Mass (g)	25.37						
k. Dry Soil + Tare mass (g)	24.31						
l. Water Mass (g)	1.06						
m. Tare Mass (g)	18.80						
n. Dry Soil Mass (g)	5.51						
o. Moisture Content (%)	19.2						
Test Sequence 2							
i. Container Number	25.0						
j. Wet Soil + Tare Mass (g)	22.81						
k. Dry Soil + Tare mass (g)	21.65						
l. Water Mass (g)	1.16						
m. Tare Mass (g)	15.73						
n. Dry Soil Mass (g)	5.92						
o. Moisture Content (%)	19.6						
Liquid Limit (%)	**69**						
Plastic Limit (%)	**19**						
Plasticity Index (%)	**50**						
Gravel (#4) retained (%)	**0.0**						
Sand (#200) retained (%)	**8.0**						
Fines (minus #200) (%)	**92.0**						
Group Symbol	**CH**						
Group Name	**Fat Clay**						
Remarks:	Sampled on 14 January 2009 by our technician in the afternoon.						

US Army Corps of Engineers

Sieve Analysis - ASTM C 117 and ASTM C 136

Laboratory	Eustis Engineering Services, L.L.C.		Test ID	20141-37	
USACE Contract Number	W912P8-06-D-0099		Contractor	Cycle Construction Company, LLC	
Project	Westwego Floodwall WBV-60		Date	1/19/2009	
Source of Material	NUCLEAR DENSITY TEST	Feature		Visual Description (ASTM D 2488)	G CL W/ SH FRAG, SI POCS & TR I
Station	13+60	Offset	42' EAST of Wall	Lift Number	3
X-Coordinate		Y-Coordinate		Elevation (ft)	
Tested By	CP	Checked By	CD	Submitted By	M.SUGGS

Materials Finer than No. 200 Sieve - ASTM C 117 (Procedure A)

Original Dry Mass of Sample (g)	75.16*
Dry Mass of Sample after Washing (g)	6.06
Material Finer than No. 200 Sieve by Washing (%)	91.95

Sieve Analysis - ASTM C 136

Mass of Sample (g)	75.16*	Mass of Material>No.4 Sieve(g)	0.00	USCS Group Name / Symbol	Fat Clay / CH

Sieve Designations		Mass Retained (g)	Percent Retained		Percent Finer by Mass (%)
Standard	Alternative		Partial	Total	
75	3				
50	2				
37.5	1 - 1/2				
25.0	1				
19.0	3/4				
12.5	1/2				
9.5	3/8				
4.75	No. 4	0.00	0.00	0.00	100.00
Pan					
2.36	No. 8	0.00	0.00	0.00	100.00
2.00	No. 10				
1.18	No. 16	0.69	0.92	0.92	99.08
0.850	No. 20				
0.600	No. 30	0.75	1.00	1.92	98.08
0.425	No. 40	0.41	0.55	2.47	97.53
0.300	No. 50	0.39	0.52	2.99	97.01
0.250	No. 60				
0.150	No. 100	1.78	2.37	5.36	94.64
0.106	No. 140				
0.075	No. 200	1.99	2.65	8.01	91.99
Pan		0.03	0.04	8.05	91.95

Remarks:	Sampled on 14 January 2009 by our technician. *Used all material.

Alpha Testing and Inspection, Inc.

Field Density - Sand Cone Method - ASTM D 1556

Laboratory	Alpha Testing & Inspection, Inc.		**Test ID**	6064-46SC	
USACE Contract Number	W912P8-07-C-0088		**Contractor**	Circle, Inc.	
Project	Lake Cataouatche PS to Segnette State Park-Phase 1		**Date**	1/17/2009	
Source of Material	Jobsite	Feature	CH	Visual Description (ASTM D 2488)	Gray Clay
Station	321+00	Offset	Crown	Lift Number	7
X-Coordinate		Y-Coordinate		Elevation (ft)	
Tested By	D. Durnin	Checked By	D. Devillier	Submitted By	L. Durnin
		Retest Of Test ID			

Calibration of Sand Cone Funnel And Plate

a. Apparatus Number	SC2
b. Mass of Initial Apparatus with Sand (g)	14.12
c. Mass of Apparatus (after Cone Fill) (g)	10.24
d. Mass of Sand in Cone and Plate (g)	3.88

Bulk Density of Sand

1. Mass of Sand + Calibration Container (g)	19.88
2. Mass of Calibration Container (g)	10.33
3. Mass of Sand (g)	9.55
4. Vol. of Calibration Container (cubic cm)	10.00
5. Bulk-Density of Sand (g/cubic cm)	95.50

Density Determination

e. Mass of Apparatus and Sand (Initial) (g)	14.12
f. Mass of Apparatus and Sand (Finish) (g)	5.56
g. Mass of Sand Used (g)	8.56
h. Mass of Sand in Cone/Plate (g) (from d)	3.88
i. Mass of Sand in Test Hole (g)	4.68
j. Mass of Wet Soil Removed from Hole (g)	5.36
k. Bulk-Density Sand (g/cubic cm) (from 5)	95.50
l. Volume of Test Hole (cubic cm)	0.05
m. Dry Mass of Soil Removed from Hole (g)	4.18
n. Wet Unit Weight (lbs/cf)	109.40
o. Dry Unit Weight (lbs/cf)	85.30

Comparison of Field Density and Maximum Density

6. Compaction Curve Control Number	L08-02567
7. Optimum Moisture (Control C) (%)	29.4
8. Max. Dry Unit Weight (Control C) (lbs/cf)	88.6
9. Compaction Required (%)	90.0
10. Degree of Compaction (%)	96.3
11. Difference from Opt. Moisture (%) (+/-)	-1.2
12. Mass Retained No. 4 (g)	
13. Mass Passing No. 4 (g)	
14. Total Mass (g)	

Moisture Content

p. Moisture Content Method	ASTM D2216
q. Container Number	4
r. Mass of Container (g)	
s. Mass of Wet Sample + Container (g)	1778.7
t. Mass of Dry Sample + Container (g)	1387.5
u. Mass of Water (g)	391.3
v. Mass of Dry Sample (g)	1387.5
w. Moisture Content (%)	28.2

Remarks:

Alpha Testing and Inspection, Inc.

Field Density - Nuclear Method - ASTM D 6938

Laboratory	Alpha Testing & Inspection, Inc.		Report Number	6361-53	
USACE Contract Number	W912P8-08-D-0041-0002		Contractor	Affolter Contracting, LTD	
Project	V-line Levee, east of Vertex-Phase 1		Date	12/20/2008	
Source of Material	Jobsite	Feature	CL	Visual Description (ASTM D 2488)	Brown & Gray Clay
Gauge Make	Instro Tek	Gauge Model	3500	Gauge Serial Number	513
Standardization Data DS	3194	Adjustment Data		Mode (BS - DT 50,100,150,200)	DT 150 (6") / DT 300 (12")
Standardization Data MS	998	Moisture Test Method Used*	ASTM 2216	Correction Used for Moist. Test	No
Tested By	D. Durnin	Checked By	D. Devillier	Submitted By	L. Durnin

* Identify whether by D2216, D4643, or D4959

Test ID	1	2	3	4	5
Retest of Test ID					
Station	112+40	117+10	122+00	127+10	131+75
Offset	30 P/S	20 P/S	Crown	Crown	25 P/S
Lift Number	5	5	3	3	3
X-Coordinate					
Y-Coordinate					
Elevation (ft)					
a. Wet Unit Weight (lbs/cf)	122.7	123.6	118.8	123.6	123.2
b. Dry Unit Weight (lbs/cf)	98.6	100.2	97.4	100.0	103.2
c. Lab Moisture Content (%)	24.5	23.3	22.0	23.6	19.4
d. Density Correction Factor					
e. Corrected Unit Weight (lbs/cf)					
f. Compaction Curve Control No.	L08-02716	L08-02716	L08-02716	L08-02716	L08-02716
g. Opt. Moisture (Control C) (%)	21.8	21.8	21.8	21.8	21.8
h. Max. Dry Unit Weight (CC)(lbs/cf)	101.2	101.2	101.2	101.2	101.2
i. Compaction Required (%)	90.0	90.0	90.0	90.0	90.0
j. Degree of Compaction (%)	97.4	99.0	96.2	98.8	100+
k. Difference-Opt. Moisture (+/-%)	2.7	1.5	0.2	1.8	-2.4

Test ID					
Retest of Test ID					
Station					
Offset					
Lift Number					
X-Coordinate					
Y-Coordinate					
Elevation (ft)					
a. Wet Unit Weight (lbs/cf)					
b. Dry Unit Weight (lbs/cf)					
c. Lab Moisture Content (%)					
d. Density Correction Factor					
e. Corrected Unit Weight (lbs/cf)					
f. Compaction Curve Control No.					
g. Opt. Moisture (Control C) (%)					
h. Max. Dry Unit Weight (CC)(lbs/cf)					
i. Compaction Required (%)					
j. Degree of Compaction (%)					
k. Difference-Opt. Moisture (+/-%)					

Remarks:

US Army Corps of Engineers

Aggregate Data Sheet

Laboratory				Test ID	
USACE Contract Number				Contractor	
Project					
Concrete Supplier				Description	
Test Date					
Tested By		Checked By		Submitted By	

Grading (CRD-C 103) (Cum. % Passing): Sieve	3-6"	1 1/2- 3"	3/4- 1 1/7	#4- 3/4"	Fine AGG.
6 in					
5 in					
4 in					
3 in					
2 1/2 in					
2 in					
1 1/2 in					
1 in					
3/4 in					
1/2 in					
3/8 in					
No. 4					
No. 8					
No. 16					
No. 30					
No. 50					
No. 100					
No. 200					
-200(a)					
F.M. (b)					

(a) CRD-C 106 (b) CRD-C 104

Test Results		3-6"	1 1/2- 3	3/4- 1 1/7	# 4- 1 1/4	Fine Agg.
Bulk SP GR, S.S.D. (CRD-C 107,108)						
Absorption, % (CRD-C 107,108):						
Organic Impurities, Fig. No. (CRD-C 121)						
Soft Particles, % (CRD-C 130)						
% Lighter Than SP GR (CRD-C 122)						
% Flat and Elongated (CRD-C 119, 120)						
WT AV % Loss, 5 Cyc Mg504 (CRD-C 115)						
L.A. Abrasion Loss, % (CRD-C 117, 145) Grading						
Unit WT. LB/CU FT (CRD-C 106):						
Friable Particles, % (CRD-C 142)						
Spec Heat, BTU/ LB/DEG F. (CRD-C 124)						
Reactivity with NoOH (CRD-C 128):	5c, mM/L					
	19c, mM/L					

Mortar-Making Properties (CRD-C 116)	Type	Cement Ratio	Days	%	Days	%

Linear Thermal Expansion, Millionths/ DEG F. (CRD-C 125,126):

Rock Type	Parallel	Across	On	Average

Mortar:

Mortar- Bar Expansion AT 100F, % (CRD-C 123):				Fine Aggregate				Coarse Aggregate			
				2 mo.	6 mo.	9 mo.	12 mo.	3 mo.	5 mo.	9mo.	12mo.
Low- Alk. Cement:		% N62O Equivalent:									
High- Alk. Cement:		% N62O Equivalent:									

Soundness in Concrete (CRD-C 40, 114):						F&T	HW- CD	HD-CW
Fine AGG.		Coarse AGG		DFE308				
Fine AGG.		Coarse AGG		DFE308				

Petrographic Data (CRD-C 127) :

Remarks:

US Army Corps of Engineers

Concrete Field Data

Laboratory	Eustis Engineering Services, L.L.C.			Test ID	20141 - 1
USACE Contract Number	W912P8-06-D-0099-0002			Contractor	Cycle Construction Company
Project Name	WBV 60 Westwego Floodwall			Test Date	12/22/2008
Concrete Supplier	Lafarge North America	Mix Number	RMX 91	Description	
Placement Location	Wall Flood Side, 14+00, 5' West of C/L	Specified Strength	3,000 psi @ 28 Days	Air %	See Note (*)
Unit Weight (pcf)		Slump (Inches)	5 Inches	Temp Limit(s) Degrees F	
Tested By	M. Suggs	X-Coordinate		Y-Coordinate	
Remarks	*Air Content Not Taken Due to Late Notification by the Contractor. No Cylinders were Delivered to the Corps of Engineers				

Test No	Truck No	Batch Ticket No	Batch Size (CY)	Cum Batch Sizes (cy)	Time Batched	Time Started Discharge	Slump At Arrival (in)	Field Water Added (gal)	Slump After Water (in)	Unit Weight (pcf)	Air Content (%)	Temperature		Cylinder Set Prefix No	No. In Set
												Ambient	Concrete		
1	349	40318820	10	10	10:24 AM	11:40 AM	4	20	6						
2	301	40318822	10	20	11:17 AM	12:10 PM	4	15	5.5						
3	337	40318823	9	29	11:47 AM	12:50 PM	4	10	5		*	40	60	1	4
4															
5															
6															
7															
8															
9															
10															
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28															
29															
30															

US Army Corps of Engineers

Concrete Compression Test Specimen Data

Laboratory	Eustis Engineering Services, L.L.C.	Test ID	20141 - 1
USACE Contract Number	W912P8-06-D-0099-0002	Contractor	Cycle Construction
Project Name	WBV 60 Westwego Floodwall	Test Date	12/22/08

Concrete Supplier	Lafarge North America	Description			
Tested By	T. Percle, Jr.	Mix Designation	RMX 91		
Specified Strength	3,000 @ 28 Days	Placement Location	Wall - Flood Side @ Station 14+00, 5' West of Centerline		
Specified (W/C+P)		X-Coordinate		Y-Coordinate	

Field Water (gal)	5	Sample Obtained From		Slump (in)	5	Air Content		Cement (C) lbs		Pozzolan (P) lbs		
Fine Ag Water		Coarse Ag Water		Batch		Ice		Field		Total Water		lbs
Time Batched	11:47 AM	Time Molded	1:15 PM	Molded By	M.S.	Temps: Air (F)	40	Concrete (F)	60	W/(C+P) act		
Time cured in water tank on job site at 73.4 plus or minus 3 degrees F after intial curing hrs								Date delivered to lab			12/23/2008	
Delivered by	Eustis	COE		A-E		Contractor		Cushioning method	T-Racks	Date received	12/23/2008	

Coarse Aggregate NMS (in)	Size/ Grade	Pit/ Quarry Name	Aggregate Batch Weight (lbs)	Aggregate Absorption (Percent)	Aggregate Moisture (Percent)	Excess Moisture (lbs)
Not Furnished	N/F	Not Furnished	N/F	N/F	N/F	N/F
Fine Aggregate						

Speciman Marking	Test At (Days)	Date to be Tested	Tested At (Days)	Tested By	Height (in)	Diameter (in)	Area (sq in)	Total Load (lbs)	Break Type	Compressive Strength (psi)
1	7	12/29/2008	7	Eustis Engineering	12	6	28.27	93360.0	5	3300
2	28	01/19/2009	28	Eustis Engineering			28.27	151650.0	5	5360
3	28	01/19/2009	28	Eustis Engineering			28.27	145900.0	5	5160
4	Hold									

OLD ESTELLE PUMPING STATION
W91298-06-0-0093
JEFFERSON, LOUISIANA

NONDESTRUCTIVE FIELD INSPECTION REPORT

OWNER:		**DATE:**	01/28/08
ENGINEER:	Corp of Engineers.	**JOB NO.:**	10590
ARCHITECT:		**REPORT NO.:**	40

CONTACT AT SITE/COMPANY:	Chap Munger / Project Engineer / U.S. Army Corp of Engineers, Inc. Bill Ray / QA Inspector / U.S. Army Corp of Engineers, Inc. Ernest Murry / Construction Representative / U.S. Army Corp of Engineers, Inc.
INSPECTION LOCATION:	Jefferson, Louisiana
DISCUSSED:	Visual and Magnetic Particle Inspection.
AREAS INSPECTED:	Visual inspection was provided for the HP14 x 89 Pile Splice Connections. Two certified welders used the SMAW (stick) process in the flat, horizontal, vertical, and overhead positions. The welders used 1/8-in. diameter AWS E7018 low hydrogen electrodes for the filler pass. The joint designation was a single (fillet weld) T & Corner joint and single bevel (groove weld) butt connection. The welders are welding all around the connection. CWI's inspector, Charles Herbert, reported to the field site to perform visual and magnetic particle inspection of the HP14 x 89 Cap beam weld connections. First thing this morning, Mr. Herbert prepared magnetic particle equipment to test gusset plate (HP14 x 89) connections. 100% of weld plate connections were magnetic particle inspected today using a B100AC Magnetic Particle Contour Probe Equipment. Mr. Herbert visually inspected the weld joint prior to performing magnetic particle inspection. The weld joint was visually found to be acceptable. The scope our service included the following: · Visual examination, · Magnetic particle examination, · Determine the discontinuities if any and locations, Mr. Herbert, performed visual and magnetic particle inspection on the structural steel Cap beam (HP14 x 89) gusset plate weld connection today. The Cap beam gusset plate members were magnetic particle tested all around the (flange and web) beam connections. 100% of the fillet weld gusset plates were inspected today. One Cap beam member (HP14 x 89) #06 was inspected today and found acceptable. The work described herein was visually and magnetic particle inspected and found acceptable in the above areas and in accordance with the project plans, specifications, AWS D1.1-06 and ASNT-CP-189 Codes.
AREAS NOT ACCEPTED:	
METHOD USED TO CORRECT REJECTED AREAS:	

OLD ESTELLE PUMPING STATION
W91298-06-0-0093
JEFFERSON, LOUISIANA

NONDESTRUCTIVE FIELD INSPECTION REPORT

OWNER:		**DATE:**	01/28/08
ENGINEER:	Corp of Engineers.	**JOB NO.:**	10590
ARCHITECT:		**REPORT NO.:**	40

ADDITIONAL REMARKS:	Mr. Herbert, spoke with Mr. Chap Munger (Project Engineer for U.S. Army Corp of Engineers,Inc.) and Mr. Bill Ray (QA Inspector for U.S. Army Corp of Engineers, Inc.) discussed the above visual and magnetic particle inspection results. Mr. Herbert reiterated the above magnetic particle results to the above members. The following items were randomly inspected for conformance with the approved shop drawings and mil tolerances allowed by AISC Codes: steel beam lengths, beam sizes, beam thicknesses, discontinuities, and weld joint connections.		
MATERIAL USED:	ASTM A572/50 and A36 Material		
ELECTRODES USED:	AWS E7018 Electrodes.		
CODES & STANDARDS:	AWS D1.1-08 Codes and ASNT-CP-189		
AMBIENT TEMPERATURE:	32 - 59F Sunny	**EQUIPMENT USED:**	B100AC Magnetic Particle Contour Probe Equipment.

Charles Herbert IV

INSPECTOR

AWS
QC 1
CHARLES HERBERT, IV
97040031
CWI

Report Of Visual Examination Of Welds

US Army Corps of Engineers

Laboratory	CWI, Inc.	Test ID	10590-40
USACE Contract Number	W912P8-06-D-0093 TO 0004	Test Date	1/28/08
Project	WBV 62 Old and New Estelle Pump Stations, Pump Station 13	Tested By	Charles Herbert
		Checked By	
Contractor	USACE	Submitted By	M. Devillier, Alpha Testing and Inspection, Inc.

Item Number/Description	Weld Identification - Location, Type, or Size	Area Examined	Accept	Reject	Retest of Test ID (Test ID Item Number)	Comments
HP14 x 89 pile #06	fillet weld connections	Cap beam gusset plate, flange and web	x			Old Estelle PS

We, the undersigned, certify that the statements in this record are correct and that the test welds were prepared and tested in conformance with the requirements of AWS D1. 1/D1. 1M, ( ) Structural Welding Code- Steel.

Manfacturer or Contractor	
Authorized By	
Date	1/28/2008
Remarks	

US Army Corps of Engineers

Report Of Magnetic- Particle Examination Of Welds

Laboratory	CWI, Inc.	Test ID	10590-40
USACE Contract Number	W912P8-06-D-0093 TO 0004	Test Date	1/28/08
Project	WBV 62 Old and New Estelle Pump Stations, Pump Station 13	Tested By	Charles Herbert
		Checked By	
Contractor	USACE	Submitted By	M. Devillier, Alpha Testing and Inspection

Quantity Tested	1	Total Accepted	1	Total Rejected		Procedure Number	

Item Number/Description	Weld Identification	Area Examined	Accept	Reject	Retest of Test ID (Test ID-Item Number)	Comments
HP14 x 89 pile #06	fillet weld connections	Cap beam gusset plates, flange and	x			Old Estelle PS

Pre- Examination

Surface Preparation	

Equipment

Instrument Make	B100AC Magnetic Particle Contour Probe			Model		Serial No.	
Date of Calibration		Re-calibration date		Calibration block weight		Serial No.	

Method of Inspection

Dry		Wet		Visible		Fluorescent	

How Media Applied

Residual		Continuous		True Continuous		Particle/Bath	
AC		DC		Half Wave			
Prods		Yoke		Cable Wrap		Other	
Direction for Field:		Circular		Longitudinal			
Strength of Field:							

(Ampere turns, field density, magnetizing force, number, and duration of force application)

Post Examination

Demagnetizing Technique (if required)			
Cleaning (if required)		Marking Method	

We, the undersigned, certify that the statements in this record are correct and that the test welds were prepared and tested in conformance with the requirements of AWS D1.1/D1.1M, ( ) Structural Welding Code- Steel

Inspector	Charles Herbert	Manufacturer or Contractor	
Level	IV	Authorized By	
		Date	1/28/08

Remarks	

NEW ESTELLE PUMPING STATION
W91298-06-0-0093
JEFFERSON, LOUISIANA

NONDESTRUCTIVE FIELD INSPECTION REPORT

OWNER:		**DATE:**	12/20/07
ENGINEER:	Corp of Engineers.	**JOB NO.:**	10590
ARCHITECT:		**REPORT NO.:**	25

CONTACT AT SITE/COMPANY:	Chap Munger / Project Engineer / U.S. Army Corps of Engineers. Ernest Murry / Construction Representative / U.S. Army Corps of Engineers.
INSPECTION LOCATION:	Jefferson, Louisiana
DISCUSSED:	Visual and Ultrasonic Inspection.
AREAS INSPECTED:	Visual and Ultrasonic inspection was provided for the HP14 x 89 Pile Splices. Two certified welders used the FCAW (MIG) process. The welders used .045-in. diameter AWS E 71T-1 electrodes. This process uses an external gas shielding of 25% Co2 and 75% Argon. The joint designation was a single (groove weld) bevel connection. The welders are welding top side of connection, back gouging back side and back welding. CWI's inspector, Charles Herbert, reported to the job site to perform visual and ultrasonic inspection of the HP14 x 89 spliced weld joint connection. Today Mr. Herbert performed visual examination on the flange and web areas of the H -Pile joint connection. Also Mr. Herbert performed visual inspection on the groove angles, located on the flange and web areas of the HP14 x 89 members. The scope our service included the following: · visual examination, · ultrasonic examination, · determine the discontinuities if any and locations, Ultrasonic shear wave flaw inspection on the structural steel HP14 x 89 spliced groove weld connection was performed today. Steel members were ultrasonically flaw tested all around the (flange and web) connection, 100% of the full penetration weld was inspected. One vertical pile member HP14 x 89 - #13 was inspected today and found acceptable. Mr. Herbert, performed visual inspection on the structural steel HP14 x 89 beam member prior to any ultrasonic inspection. All were found to be acceptable. The work described herein was visually and ultrasonically inspected and found acceptable in the above areas and in accordance with the project plans, specifications, AWS D1.1-06 and ASNT-CP-189 Codes.
AREAS NOT ACCEPTED:	
METHOD USED TO CORRECT REJECTED AREAS:	

NEW ESTELLE PUMPING STATION
W91298-06-0-0093
JEFFERSON, LOUISIANA

NONDESTRUCTIVE FIELD INSPECTION REPORT

OWNER:		**DATE:**	12/20/07
ENGINEER:	Corp of Engineers.	**JOB NO.:**	10590
ARCHITECT:		**REPORT NO.:**	25

ADDITIONAL REMARKS:	Mr. Herbert, spoke with Mr. Ernest Murry (Construction Representative for United States Army Corp of Engineers, Inc.) and Mr. Chap Munger (Project Engineer for Corp of Engineers,Inc.) discussed the above visual and ultrasonic inspection results. Mr. Herbert reiterated the above ultrasonic results to the above members. Mr. Herbert said all welded connections inspected today were found to be acceptable in accordance with plans and specifications.		
MATERIAL USED:	ASTM A572/50 Material		
ELECTRODES USED:	AWS E7018 Electrodes.		
CODES & STANDARDS:	AWS D1.1-06 Codes and ASNT-CP-189		
AMBIENT TEMPERATURE:	58 - 74F Partly Cloudy/rain	**EQUIPMENT USED:**	Ultrasonic Flaw Detection Unit.

Charles Herbert IV

INSPECTOR

AWS
QC 1
CHARLES HERBERT, IV
97040031
CWI

US Army Corps of Engineers

Report Of Ultrasonic Examination Of Welds

Laboratory	CWI, Inc.	Test ID	10590-25
USACE Contract Number	W912P8-06-D-0093 TO 0004	Test Date	12/20/07
Project	WBV 62 Old and New Estelle Pump Stations, Pump Station 13	Tested By	Charles Herbert
		Checked By	
Contractor	USACE	Submitted By	M. Devillier, Alpha Testing and Inspection, Inc.

Inspection Equipment and Techniques

Procedure No.:		Transducer Make	
Instrument Type:	Ultrasonic Flaw Detection Unit	Transducer S/N:	
Instrument S/N:		Transducer Frequency:	
Wedge Angle (s):		Transducer Diameter:	
Date of Calibration:		Couplant:	
Date of Re-Calibration:		Reference Level:	

Item Number/Description	Weld Identification - Location, Type, or Size	Area Examined	Accept	Reject	Retest of Test ID (Test ID-Item Number)	Comments
HP14 x 89 vertical pile #13	Splice single bevel - groove weld	100% full penetration weld, web and flange	x			New Estelle PS

We, the undersigned, certify that the statements in this record are correct and that the test welds were prepared and tested in conformance with the requirements of AWS D1. 1/D1. 1M, ( ) Structural Welding Code- Steel.

Inspector	Charles Herbert	Manfacturer or Contractor	
Level	IV	Authorized By	
		Date	12/20/07
Remarks			

13123

The Nondestructive and Destructive Testing Company
A Mandina's Inspection Services, Inc. Company
Phone (504) 366-1667 Fax (504) 366-1688
209 Pi Street, Belle Chasse, LA 70037

Customer P.O. No.: ____
Code or Standard: AWS D1.1
Date: 12-19-07
Reference Drawing: N/A
Inspection Sketch: N/A
Page ____ of ____

Customer B&H BRK / TILLMER ENVIRONMENTAL **Location** NEW ESTELLE PUMPING STATION
Customer Rep. BETA **Project Description** H PILE SPLICE

Inspection Equipment and Techniques

Ultrasonic Inspection (U/T)	*Liquid Penetrant Inspection (P/T)*	*Magnetic Particle Inspection (M/T)*
Procedure No.: UT004P	Procedure No.:	Procedure No.: MT001P
Instrument Type: EPOCH III	Manufacturer:	Equipment Manufacturer: PARKER
Instrument S/N: 96193005	Cleaner:	Equipment Model No.: B310
Transducer Make: PANAMETRIX	Penetrant:	Equipment Serial No.: 4585
Transducer Serial No.: NA	Penetrant Dwell Time:	Technique: CONTINUOUS
Transducer Frequency: 2.25	Emulsifier:	(Yoke, Prod, Coils, Head and Tail Shot)
Transducer Diameter: 1.500	Emulsification Time:	Current Type: AC (AC, DC, HWDC)
Wedge Angle(s): 70°	Developer:	Amperes or Amperes Turns: Fixed
Date of Calibration: 10-19-07	Development Time:	Particle / Bath: ELV
Date of Re-Calibration: 1-18-07	**Lighting (P/T / M/T)**	Date of Calibration: NA
Couplant: SONATRACE GT40	Black Light Manufacturer:	Date of Re-Calibration: NA
Reference Level: 50-3	Black Light Serial No.:	Calibration Block Weight: 10
		Calibration Block S/N: 4955
		Kitos Ring: (No.: Holes)

When this report is used in accordance with AWS D1.1 Non-tubular members or D1.5 the X &Y Location, Class, Depth from face A, Angular Distance, Leg and Calculation (a-b-c=d where a=indication level, b=reference level, c=attenuation factor and d=indication rating) for unacceptable welds shall be noted on this report.

Item	*Description of Item Inspected*	*Acc.*	*Rej.*	*Comments / Sketch*
	100% VT	✓		
				FRONT FLANGE CAP LAW
	100% MT	✓		
				REWELDED REINSPECTED
	100% UT ON RATER	✓		
				WELD FOUND TO BE ACCEPTABLE
	PILE #12			

Inspector Name: TIMOTHY R. DAVIS	Level: II	Hours: 8	Mileage: 20
Assistant Name:	Level:	Consumables: 1WCP 1 BATH 1 UT001P	
Customer Signature:			

This report is not to be construed as a guaranty or warranty of the condition of the materials tested. The NDT Company or Mandina's Inspection Services, Inc. is not liable for any interpretation of results or conditions, or for any claims or losses attributable to performance of a test. These services are rendered without any warranty. Any liability is limited to the amount paid for the services at issue. All orders are subject to the NDT Company or Mandina's Inspection Services, Inc.'s standard terms and conditions of the sale which are available upon request. *(The NDT Company may recommend an inspection method; however, final authority is the customer's.)*

White - Office Copy *Yellow - Customer* *Pink - Accounting* *Gold - Technician*

Report Of Visual Examination Of Welds

US Army Corps of Engineers

Laboratory	NDT-Mandina	Test ID	13123
USACE Contract Number	W912P8-06-D-0093 TO 0004	Test Date	12/19/07
Project	WBV 62 Old and New Estelle Pump Stations, Pump Station 13	Tested By	Timothy R. Davis
		Checked By	
Contractor	Allen Wright	Submitted By	Mark A. Cheek, Beta Testing and Inspection, LLC

Item Number/Description	Weld Identification - Location, Type, or Size	Area Examined	Accept	Reject	Retest of Test ID (Test ID Item Number)	Comments
HP14 x 89 batter pile #12		front flange cap low	x			New Estelle PS

We, the undersigned, certify that the statements in this record are correct and that the test welds were prepared and tested in conformance with the requirements of AWS D1. 1/D1. 1M, ( ) Structural Welding Code- Steel.

Manfacturer or Contractor	
Authorized By	
Date	12/19/2007
Remarks	

US Army Corps of Engineers

Report Of Ultrasonic Examination Of Welds

Laboratory	NDT-Mandina	Test ID	13123
USACE Contract Number	W912P8-06-D-0093 TO 0004	Test Date	12/19/07
Project	WBV 62 Old and New Estelle Pump Stations, Pump Station 13	Tested By	Timothy R. Davis
		Checked By	
Contractor	Allen Wright	Submitted By	Mark A. Cheek, Beta Testing and Inspection, LLC

Inspection Equipment and Techniques

Procedure No.:	UT004D	Transducer Make	Panametric
Instrument Type:	Epoch III	Transducer S/N:	NH
Instrument S/N:	96133005	Transducer Frequency:	2.25
Wedge Angle (s):	70 deg	Transducer Diameter:	0.5
Date of Calibration:	10/18/2007	Couplant:	Sonatrace 9140
Date of Re-Calibration:	1/18/2007	Reference Level:	50.3

Item Number/Description	Weld Identification - Location, Type, or Size	Area Examined	Accept	Reject	Retest of Test ID (Test ID-Item Number)	Comments
HP14 x 89 batter pile #12		front flange cap low	x			New Estelle PS.

We, the undersigned, certify that the statements in this record are correct and that the test welds were prepared and tested in conformance with the requirements of AWS D1. 1/D1. 1M, ( ) Structural Welding Code- Steel.

Inspector	Timothy R. Davis	Manfacturer or Contractor	
Level	II	Authorized By	
		Date	12/19/07
Remarks			

US Army Corps of Engineers

Report Of Magnetic- Particle Examination Of Welds

Laboratory	NDT-Mandina	Test ID	13123
USACE Contract Number	W912P8-06-D-0093 TO 0004	Test Date	12/19/07
Project	WBV 62 Old and New Estelle Pump Stations, Pump Station 13	Tested By	Timothy R. Davis
		Checked By	
Contractor	Allen Wright	Submitted By	Mark A. Cheek, Beta Testing and Inspection, LLC

Quantity Tested	1	Total Accepted	1	Total Rejected		Procedure Number	MT001P

Item Number/Description	Weld Identification	Area Examined	Accept	Reject	Retest of Test ID (Test ID-Item Number)	Comments
HP14 x 89 batter pile # 12		front flange cap low	x			New Estelle PS

Pre- Examination

Surface Preparation	

Equipment

Instrument Make	Parker			Model	B-310	Serial No.	4585
Date of Calibration		Re-calibration date		Calibration block weight	10	Serial No.	4899

Method of Inspection

Dry		Wet		Visible		Fluorescent	

How Media Applied

Residual		Continuous	x	True Continuous		Particle/Bath	Ely
AC	x	DC		Half Wave			
Prods		Yoke	x	Cable Wrap		Other	
Direction for Field:		Circular		Longitudinal			
Strength of Field:							

(Ampere turns, field density, magnetizing force, number, and duration of force application)

Post Examination

Demagnetizing Technique (if required)			
Cleaning (if required)		Marking Method	

We, the undersigned, certify that the statements in this record are correct and that the test welds were prepared and tested in conformance with the requirements of AWS D1.1/D1.1M, ( ) Structural Welding Code- Steel

Inspector	Timothy R. Davis	Manufacturer or Contractor	
Level	II	Authorized By	
		Date	12/19/07

Remarks

US Army Corps of Engineers

Report Of Liquid Penetrant Examination Of Welds

Laboratory		Test ID	
USACE Contract Number		Test Date	
Project		Tested By	
		Checked By	
Contractor		Submitted By	

Inspection Equipment and Techniques

Procedure No.:		Cleaner:	
Manufacturer:		Penetrant:	
Developer:		Penetrant Dwell Time:	
Development Time:		Emulsifier:	
Black Light Manufacturer:		Emulsification Time:	
Black Light S/N:			

Item Number/Description	Weld Identification - Location, Type, or Size	Area Examined	Accept	Reject	Retest of Test ID (Test ID - Item No)	Comments

We, the undersigned, certify that the statements in this record are correct and that the test welds were prepared and tested in conformance with the requirements of AWS D1. 1/D1. 1M, ( ) Structural Welding Code- Steel.

Inspector		Manfacturer or Contractor	
Level		Authorized By	
		Date	
Remarks			

US Army Corps of Engineers

Report Of Radiographic Examination Of Welds

Laboratory		Test ID	
USACE Contract Number		Test Date	
Project		Tested By	
		Checked By	
Contractor		Submitted By	

Item Number/Description	Weld Identification	Area Examined	Accept	Reject	Retest of Test ID (Test ID-Item Number)	Comments

We, the undersigned, certify that the statements in this record are correct and that the test welds were prepared and tested in conformance with the requirements of AWS D1. 1/D1. 1M, ( ) Structural Welding Code- Steel.

Radiographer(s)		Manfacturer or Contractor	
Interpreter		Authorized By	
		Date	
Remarks			

Appendix B

Material Testing Laboratory Requirements

B-1. Purpose

All construction material testing laboratories used in support of the Contractor's Quality Control (CQC) testing and the Government's Quality Assurance (QA) testing must receive validation by the Material Testing Center (MTC), Engineering and Research Development Center (ERDC), in Vicksburg Mississippi. This includes all contractor and government on-site laboratories or commercial laboratories used either for CQC or QA testing.

B-2. Applicability

This procedure applies to all projects being managed by the New Orleans District for which CQC and QA testing of construction materials is conducted

B-3. References

ASTM E 329-06a, Agencies Engaged in the Construction Inspection and/or Testing

ER 1110-1-261 (28 April 99), Quality Assurance of Laboratory Testing Procedures

ER 1110-1-8100 (31 Dec 97), Laboratory Investigations and Testing

Corps of Engineers Validated Laboratories
http://www.wes.army.mil/SL/MTC/ValidatedLabsList.htm

New Orleans Construction Division Operating Manual (CDOM), 1 March 2002

B-4. Responsibilities

The Administrative Contracting Officer (ACO) / Contracting Officer's Representative (COR) is responsible for ensuring that all testing laboratories used for CQC or QA testing are on the electronic validated list for the tests to be performed and for requesting that New Orleans District coordinate as necessary to pursue validation of a desired laboratory.

CEMVN-CD-Q is responsible for funding Material Testing Center (MTC) inspections and audits, tracking labs that have been inspected and validated, and ensuring validated labs are added to the electronic listing referenced above.

B-5. Procedures

After award, the contractor submits a Quality Control Plan which in part delineates the scope of the testing program and identifies a testing laboratory(s) proposed for specific tests. Contract specific Quality Assurance Plans will include requirements for QA verification testing by a Corps validated laboratory.

The Administrative Contracting Officer (ACO) / Contracting Officer's Representative (COR) will ensure that the CQC laboratory is independent of the QA laboratory and will work with the contractor if necessary to select another laboratory for CQC or QA testing. The CQC and QA plans will reflect the selected laboratories. If the laboratory proposed by the contractor is not a currently validated lab, then the Administrative Contracting Officer (ACO) / Contracting Officer's Representative (COR) will notify the contractor and request an inspection of the selected laboratory coordinated by CEMVN-CD-Q in accordance with the procedures described in Construction Division's Operating Manual (CDOM). For planning purposes, the validation process may require a period of six months to complete.

Briefly the MTC validation process is described as follows:

Validation of a laboratory may consist of either (1) an inspection of the laboratory and their processes or (2) an audit of inspection reports and other documentation furnished by other validating agencies or organizations.

MTC will perform inspections in accordance with ASTM E 329 and applicable tests in ER 1110-2-1906 or tests required by project specifications.

The MTC may validate a laboratory if it has been accredited by the Concrete and Cement Reference Laboratory (CCRL) or ASHTO Materials Reference Laboratory (AMRL) within the past two years using ASTM E 329. Inspection by the MTC may be required after auditing if one or more of the critical testing procedures required in the project specifications were not included in the CCRL or AMRL inspection report or if there is any question that the laboratory may not be able to provide the required services for the specified tests.

More information about the validation process is available at the following case sensitive address: "http://www.wes.army.mil/SL/MTC/inspection.htm".

B-6. Records

Records demonstrating laboratory validation will be maintained by CEMVN-CD-Q for a particular project during the contract period and at the MTC web site for the most current laboratory listing.

Contractor Quality Control attachments

....follow this page....

CONTRACTOR QUALITY CONTROL PLAN

Contract No. W912P8-__-__-___
Project Name: _____

Contractor: _____

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- 3.3 Manager of Construction

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- 4.1 CQC System Manager
- 4.2 CQC System Manager Alternate
- 4.3 Manager of Construction

5.0 Designation of CQC System Manager

6.0 Designation of CQC Systems Manager Alternate

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  - 7.2.1 Test List
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8.0 Quality Control Program

9.0 Forms

1.0 COMPANY POLICY

_____ Construction, Corp. considers quality control to be an inherent safeguard to ensure quality work and to guarantee that all work is done according to the contract documents in a professional manner. Noncompliance with plans and specifications must be detected promptly, and proper action taken to assure that this policy is a viable tool in monitoring the work.

2.0 PLAN PURPOSE

It is the intent of this Quality Control Plan (QCP) to establish and explain how this construction corporation plans to organize, control, and review all activities according to the plans and specifications provided by the U. S. Army Corps of Engineers with regard to quality for the above reference project. The plans primary purposes are to provide for the level of construction quality required by strict accordance with the plans and specifications.

3.0 QUALITY CONTROL ORGANIZATION

3.1 CQC System Manager

The CQC System Manager (CQCM) has front line responsibility for quality control. He will become thoroughly familiar with all aspects of the project and ultimately inspect all work to ensure quality is being maintained by all craftsmen, vendors and subcontractors. The CQCM is ultimately responsible for inspecting, documenting, and reporting to the contracting officer all aspects of the work described and detailed in the plans and specifications. He is responsible for implementing and enforcing the Quality Control Plan. His duties include, but are not limited to:

a. Implementation of the 3-phase control system for all definable features of work.

b. Day-to-day inspection of the work.

c. Daily on site documentation

d. Ensure that all in-place work meets or exceeds all minimum standards set forth in the plans and specifications.

e. Detect discrepancies or problems on site and immediately bring the same to

the attention of the Contracting Officer's Representative, as should be necessary.

f. Preparation and review of submittals and certification of submittals prior to submission.

g. Maintain document control.

h. Maintain As-built conditions.

i. Interface with the owner and outside agencies as required.

The CQCM proposed for this project is _____. See section 4.0 for a copy of his resume'.

3.2 CQC System Manager Alternate

The CQC system manager alternate will assume responsibilities for all aspects of quality control as required by our Quality Control Plan and the Contract Documents should the CQCM not be able to perform his duties. The CQC system manager alternate for this project is _____.

3.3 Manager of Construction

The Manager of Construction for this corporation is based in the home office in _____ and has a major responsibility for quality control through a supervisory role of the CQCM. The Manager of Construction will at all times keep the field forces focused on the company's commitment to quality in all phases of the work. The Manager of Construction will make routine visits to the site of work. The Manager of Construction for this company is _____.

4.0 RESUME OF PERSONNEL

Attached are resumes of all personnel in the above described organization. The Contracting Officer's approval will be requested before any staff changes occur, if they should become necessary.

QUALITY CONTROL
ORGANIZATIONAL CHART
CONTRACT NO. W912P8-__-__-____

```
                    +---------------+
                    |               |
                    |   PRESIDENT   |
                    |               |
                    |               |
                    +---------------+
                            |
                            |
                    +---------------+
                    |    MANAGER    |
                    |      OF       |
                    |  CONSTRUCTION |
                    |               |
                    +---------------+
                            |
         +-------------------------------------+
         |                                     |
+---------------+                      +---------------+
|               |                      |               |
|      CQC      |                      |               |
|    SYSTEM     |||||||||||||||||||||||    PROJECT    |
|    MANAGER    |                      | SUPERINTENDENT|
|               |                      |               |
+---------------+                      +---------------+
         |
         |
         |
+---------------+
|               |
|     CQCM      |
|   ALTERNATE   |
|               |
+---------------+
         |
         |
+---------------+
|               |
| SUBCONTRACTOR |
|  QC MANAGER   |
|               |
+---------------+
```

4.1 Resume' of _____, CQC System Manager

Personal Data and Education

Date of Birth:
Residence:
Graduate of:
Completed courses in:

Professional Experience

4.2 Resume' of _____, CQCM Alternate

Personal Data and Education

Date of Birth:
Residence:
Graduate of:
Completed courses in:

Professional Experience

4.3 Resume' of _____, Manager of Construction

Personal Data and Education

Date of Birth:
Residence:
Graduate of:
Completed courses in:

Professional Experience

5.0 DESIGNATION OF CQC SYSTEMS MANAGER

(Contractor)

Date

Mr. _____

(Mailing Address)

SUBJECT: Contract No. W912P8-__-__-____
(Project Name)

Mr. _____:

This letter is to designate you as the Contract Quality Control Systems Manager for the subject project. In this capacity, you will be responsible for all aspects of quality control as required by our Quality Control Plan and the Contract Documents. You have complete authority to implement these programs including authorization to stop work which fails to comply with the requirements of the Contract Documents.

Sincerely,

_____, President

6.0 DESIGNATION OF CQC SYSTEM MANAGER ATERNATE

(Contractor)

Date

Mr. _____

(Mailing Address)

SUBJECT: Contract No. W912P8-__-__-____
(Project Name)

Mr. _____

This letter is to designate you as the Quality Control System Manager Alternate for the subject project. Should for any reason Mr. _____ not be able to perform his duties as CQCM, you will assume responsibility for all aspects of quality control as required by our Quality Control Plan and Contract Documents. To enable you to fulfill this responsibility, you have complete authority to implement these programs including authorization to stop work which fails to comply with the requirements of the Contract Documents.

Sincerely,

_____, President

7.0 PROCEDURES

7.1 Scheduling and Managing Submittals.

The CQCM will be the submittal manager. The CQCM has full authority to act for the firm in all submittal matters. His responsibilities include scheduling, review, updating and any submittals required from subcontractors.

Within 7 days of the Notice to Proceed, the CQCM will complete the submittal register contained in Section 01300 and submit to the Contracting Officer 4 copies for approval. Contractor schedule dates will be coordinated with the progress schedule and shall reflect 30-day minimum period for review and approval.

The CQCM will review the submittal register a minimum of every 10 days. The submittal register will be utilized to plan and monitor submittal progress so as to ensure timely approval of methods/materials prior to their scheduled need times. The submittal register will be available for inspection by the Contracting Officer at all times. An updated submittal register will be forwarded to the CO at 60-day intervals or as requested.

The CQCM will review the submittal register during preparatory phase of quality control to ensure that all submittals for the ensuing feature of work are approved and will take action to correct any deficiencies in submittal requirements.

All submittals required by the specifications or as needed for approval of deviation will be submitted by the CQCM in original and 4 copies utilizing ENG form 4025 in accordance with submittal register schedule dates or sooner. Prior to submittal, all shop drawings, data, samples, certifications, and test reports will be reviewed by the CQCM to ensure compliance with the contract requirements. Corrections and revisions will be requested where necessary.

7.2 Control Testing

7.2.1 Test List - A listing of all tests indicated in the contract specifications and additional tests as needed to establish quality control will be incorporated in the Contractor Quality Control Program found in section 8.0 of this plan. This listing will include the name of the test, specification para. number, feature of work tested, responsible person, and frequency.

7.2.2 Testing Facilities - The proposed testing lab for use on this project is:

_____ Testing Laboratories
PO Box _____
_____, LA _____

If required, a resume' of _____ facilities and personnel qualifications will be furnished to the Contracting Officer.

7.2.3 Test Records - All testing activities will be recorded on the CQC report, indicating the name of the test performed, specification paragraph reference, and

location performed. Results of the tests will be recorded on the daily CQC report or attachments. Actual test reports will be furnished promptly to the Contracting Officer as directed by the specifications.

7.3 Inspection

7.3.1 Materials - The CQCM will inspect all material/equipment deliveries for: (1) compliance with approved submittals, (2) damage, (3) correct dimensions and quantities, and (4) required labeling and documentation. The Contracting Officer will be notified of any materials/equipment failing to meet requirements. A record of inspection will be noted in the CQC report and any necessary corrective action will be initiated. Proper storage will be checked.

7.3.2 Off-Site Inspection - The CQCM will inspect manufacturing facilities and material sources as specifically directed by the specifications. Additional inspections will be conducted as necessary to ensure compliance with the specifications. The CQCM will record off-site surveillance activities in the CQC report. Where instances of noncompliance are observed, corrective action will be initiated.

7.3.3 On-Site Inspection - Each craftsman will be charged with the responsibility of performing his or her work in a workman like manner and continually striving for the highest degree of quality. Only craftsman who exhibit an ability to perform and desire to achieve quality will be employed.

The CQCM will routinely and continually inspect the work for compliance with contract documents. His duties, as outlined in 3.1 above, are for the purpose of maintaining and documenting the work as required to achieve a high degree of quality.

The Contract Quality Control Program outlined in paragraph 8.0 of this plan will provide an outline for the CQCM with regard to all definable features of the work. The CQCM's inspection of these work features will be accomplished through implementation of the 3-phase control procedure outline in para 7.4.

7.3.4 Completion Inspection - After completion of all work, the CQCM will conduct a completion inspection of all work features. A punchlist will be developed to identify all items which are not in compliance with the specifications and drawings. The CQCM will establish a date by which each deficiency will be corrected and note such date on the punchlist. A follow-up inspection will be conducted to verify completion of all punchlist items. The completion inspection and any resulting corrective action will be accomplished within the contract performance period. The Contracting Officer will be notified upon completion of the punchlist and corrective work. The punchlist will be made part of the Quality Control documentation by attachment to the CQC report.

7.4 Control Procedures

A 3-phase control system shall be implemented by the Quality Control staff to ensure that construction, including subcontractors and suppliers, complies with the requirements of the contract documents. This system of management will address each definable feature of work beginning with early planning stage requirements and ending with the finished work. Each phase will allow the opportunity to prevent problems and deficiencies and ensure that the accident prevention program is implemented. The 3 control phases are outlined in para 7.4.1 thru 7.4.3.

7.4.1 Preparatory Phase - This phase will be performed prior to beginning work on each definable feature of work. This phase will be conducted at a meeting involving the CQCM/Project Superintendent, QA personnel, and the foreman involved in the particular work feature. The Contracting Officer will be notified 48 hours in advance of the preparatory phase. This phase will include:

a. A review of the applicable section of the specifications and contract drawings. (review specs)

b. A review of the submittal register to ensure that all required submittals are submitted and approved. Take corrective action when necessary. Submittal data will be discussed to acquaint all team members with technical aspects and points particular to the work feature. (review submittals)

c. A check to ensure that materials and equipment are in compliance with approved submittals and specifications. Verify that required materials/equipment are on hand and properly stored. (check material)

d. Verify that preliminary work is completed.

e. Review control testing requirements and verify that testing facilities are approved. Verify that necessary provisions are made for testing. (review testing)

f. A consensus will be reached on planned construction procedures and the required level of quality expected from the CQCM in order to meet contract specifications. (set standards)

g. Review appropriate Activity Hazard Analysis to assure safety requirements are met. The CQCM will inspect all equipment to ensure that minimum requirements for safety provisions in accordance with EM 385-1-1 and applicable regulations are met. (safety check)

h. The above described activities will be documented on the COE form

"Preparatory Phase Checklist". This form will be attached to the CQC report and furnished to the Contracting Officer. Problems and deficiencies apparent during the preparatory phase and corrective action initiated will be noted in this report.

7.4.2 Initial Phase - This phase is performed once a representative portion of work has taken place for each definable feature of work and will be conducted at a meeting involving the CQCM/Project Superintendent and foreman involved in the particular work feature. The Contracting Officer will be notified 48 hours in advance of this phase. Initial phase will include:

a. A check to ensure that preliminary work is completed.

b. Verify that materials/equipment and construction procedures are in compliance with the contract documents.

c. Review control testing requirements.

d. Set standards of quality required to meet contract specifications.

e. Review the Activity Hazard Analysis to ensure safety requirements are met. Check equipment for safety provisions.

f. The above described activities will be documented on the COE form "Initial Phase Checklist". This form will be attached to the CQC report and furnished to the Contracting Officer. Problems and deficiencies apparent during the initial phase and corrective actions initiated will be noted in this report. The initial phase will be repeated any time the CQCM feels that quality standards and safety requirements must be reinforced.

7.4.3 Follow-Up Phase - This phase is accomplished through the daily inspections by the CQCM, also through performance of the required control testing. Follow-up phase efforts will ensure a continuation of quality and safety standards established during preparatory and initial phases until completion of the work feature. The CQCM's follow-up phase activities, including deficiencies noted, corrective action taken, and control testing results will be recorded in the daily CQC report.

7.5 Reporting and Documentation

The CQCM will maintain records of all quality control activities including documentation of control testing and inspection, and maintain integrity of the contract documents through use of the following described forms and procedures. Additional reports will be formulated or added as needed.

7.5.1 Daily Record - The CQCM will utilize the COE furnished forms titled "*Contractor Quality Control CQC Form"* to record daily control activities and resources used, work performed, and other data indicated on this form. The original and two copies will be furnished to the Contracting Officer within 12 hours of the reporting date. The CQCM will maintain copies for his files. Test reports will be included in the CQC report.

7.5.2 Control Phase Checklists - The CQCM will utilize the COE furnished forms entitled "*Preparatory Phase Checklist"* and *"Initial Phase Checklist"* to document these control phase activities. Original and two copies will be attached to the CQC report for the date on which the control phase is completed. A log will be posted at the jobsite office in chart form to record the dates on which preparatory and initial phases were completed for each definable feature of work so as to allow easy verification of control activities.

7.5.3 Tracking Construction Deficiencies - The form for tracking construction deficiencies is the Deficiency Report (DR). A DR can be issued by the CQCM/Project Superintendent or Manager of Construction. All DR's shall be kept and updated by the CQCM. The DR log will be available for inspection by the Contracting Officer. See attached forms for the example of a DR.

The DR tracking log will be in chart form and bound in a log book maintained on site. See attached example of the deficiency report tracking log. The DR log book is available for inspection by the Contracting Officer at all times.

A construction deficiency for the purposes of this plan is defined as:

1. An occurrence in which defective work or work lacking some essential part has been covered or is otherwise left as complete.

2. Products are furnished to the site or incorporated into the work which do not meet the conditions of the contract documents.

3. Inspection points or contract requirements affecting quality of the work that have not been met. Minor defects in work on which construction is underway is not to be considered a Construction Deficiency.

7.5.4 Contract Document Control - The CQCM will maintain a record in log form of the most up-to-date documents issued for construction and adjustments. No contract documents will be replaced or revised without receipt of a modification or direction from the Contracting Officer. The CQCM will maintain As-Built contract drawings.

7.6 Changes to the CQC Plan - Periodically, and at least once weekly, the CQCM

will review the CQC plan with the possible need for changes in mind. During the course of work on this contract, it is reasonable to expect the need for some changes to arise. When they do, the QC Manager will incorporate these changes in the form of written amendments and copies will be furnished to the Contracting Officer.

8.0 QUALITY CONTROL PROGRAM

(Sample only, this is done for each definable feature of wo rk)

Q. C. ACTIVITIES & TESTING REQUIREMENTS FOR DEFINABLE FEATURES OF WORK

CONTRACT W912P8-__-__-_____

Definable Feature: Cast In-Place Structural Concrete
Section 03301

Definable Feature		Submittal	Quality Control Activities		
D scription	Spec. Para.	Req'd	Description of Observation Procedure or Test Required	Freq.	Remarks
Concrete - Grout, Water	03301-15.1.4.1 03301-15.5.1.6	Submittal Register	Grout certificate, equipment & method used, & source of mixing & curing water	Once prior to placement	
Concrete - Finishing Formed Surfaces	03301-12.2	QC Report	Visually inspect all finishing is started within 24 hours of form removal, tie rod holes & defective concrete voids and honeycombs are filled properly, smooth surface	After each placement	
Concrete - Fine Aggregate	03301-15.2.1.1	QC Report	Sieve analysis and fineness modulus determination	At least once each delivery	Testing by _____ Laboratory
Concrete - Coarse Aggregate	03301-15.2.2	QC Report	Sieve Analysis	At least once each delivery	Testing by _____ Laboratory
Concrete - Moisture Test	03301-15.2.2.2	QC Report	Test for moisture content for each size coarse aggregate	At least once each delivery	Testing by _____ Laboratory
Concrete - Mixer Uniformity	C03301-15.2.12	QC Report	Uniformity of concrete determined in accordance with ASTM C 94.	Prior to concrete placement & 1/ 6 mo	

Q. C. ACTIVITIES & TESTING REQUIREMENTS FOR DEFINABLE FEATURES OF WORK

CONTRACT W912P8-__-__-____

Definable Feature: Cast In-Place Structural Concrete
Section 03301

Definable Feature		Submittal	Quality Control Activities		
Description	Spec. Para.	Req'd	Description of Observation Procedure or Test Required	Freq.	Remarks
Concrete	03301-5.3	Submittal Register	Submit batch plant details, mixer details, conveying methods and equipment, placing, joint clean-up, curing, and weather requirements	once 14 days prior to placement	
Concrete	03301-3.1.1	Submittal Register	Submit 500 lb sample of aggregate to Waterway Experiment Station for testing if an approved supplier is not used	Once prior to concrete placement	
Concrete	03301-5.1.1	Submittal Register	Submit concrete mixture proportion	Once	
Concrete - Materials	03301-5.1.2 03301-5.1.5 03301-5.2.3 03301-5.2.5	Submittal Register	Submit cement cert. of compliance Submit sieve analysis for aggregates Submit air-entraining agent cert. of compliance Submit curing compound cert. of compliance	Once	Testing by supplier or _____ Lab

Q. C. ACTIVITIES & TESTING REQUIREMENTS FOR DEFINABLE FEATURES OF WORK CONTRACT W912P8-__-__-_____

Definable Feature: Cast In-Place Structural Concrete
Section 03301

Definable Feature		Submittal	Quality Control Activities		
Description	Spec. Para.	Req'd	Description of Observation Procedure or Test Required	Freq.	Remarks
Concrete - Placement Preparations	03301-15.2.7	QC Report & LMV Form 1246	Visually & Measure as needed, prior to placement, foundations, const. joints, forms, embedded items, etc., to verify that concrete placement OK	Prior to placement	
Concrete - Air Content	03301-15.2.6.1	QC Report	Test Concrete for air content	Twice per day	Use _____ Laboratory
Concrete - Slump	03301-15.2.5.2	QC Report	Test Concrete slump	Twice per day	Use _____ Laboratory
Concrete - Placement	03301-15.2.8	QC Report	Visually inspect placement operations to verify proper equipment, methods, time interval, temp., yardage placed, & placement method	Each Placement	
Concrete - Curing	03301-13.2,4	QC Report	Inspect all surfaces subject to moist curing & impervious sheet curing	At least once/day	Including weekend/hol.
Concrete - Curing	03301-13.3	QC Report	Assure that curing compound is mixed properly, & meets minimum pressure and coverage requirements	After removal of forms	Measure & visual
Concrete - Vibration	03301-15.2.9	QC Report	Test frequency and amplitude of vibrator	Prior to 1st use & 1/month	

9.0 FORMS

CONTRACTOR QUALITY CONTROL (CQC) FORM

Contractor's Name

_____
_____
_____

Daily Report No: _____ Date: _____
Contract No: W912P8-__-__-____

Project Title and Location: _____

Weather: _____ Rain: ____in. Temp: ____Min. ___ Max.

1. Contractor/Subcontractors and Area of Responsibility:

NUMBER	TRADE	HOURS	EMPLOYER	LOCATION/DESCRIPTION

2. Operating Plant of Equipment. (Not hand tools)

PLANT/ EQUIPMENT	DATE OF ARRIVAL/ DEPARTURE	LEASED/ OWNED L OR O	DATE OF SAFETY CHECK	HOURS USED	HOURS IDLE	HOURS REPAIR

CQC Report Form (Cont'd)

3. Work performed today: (Indicate location and description of work performed by prime and/or subcontractor by letter in table above.)

_____
_____
_____
_____
_____
_____
_____

4. Results of control activities: (Indicate whether P - preparatory, I - Initial, or F - Follow-up Phase. When a P or I meeting is conducted, complete appropriate forms, attached.)

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

5. Test performed as required by plans and/or specifications:

_____
_____
_____
_____
_____
_____
_____

6. Materials received:

_____
_____
_____
_____
_____
_____

CQC REPORT FORM (CONT'D)

7. Submittals Reviewed:

(a)Submittal No.	(b) Spec/Plan Reference	(c) By Whom	(d) Action

8. Off-site surveillance activities, including action taken:

_____
_____
_____
_____
_____
_____
_____

9. Job Safety: (Report violations; Corrective instructions given, taken.)

_____
_____
_____
_____
_____

10. Environmental Protection: (Report violations; Corrective instructions given, taken.)

_____
_____
_____
_____
_____

11. Remarks: (Instructions received or given. Conflicts in Plans and/or Specifications.)

_____
_____
_____
_____
_____

Contractor's Verification: On behalf of the contractor, I certify this report is complete and correct, and all materials and equipment used and work performed during this reporting period are in compliance with the plans and specifications, to the best of my knowledge, except as noted above.

_____ _____
Authorized CQC System Manager Date

PREPARATORY PHASE CHECKLIST FORM

Contract No.: W912P8-__-____ Date: _____

Definable Feature:
_____

Government Representative Notified 48 Hours in Advance Yes____ No ____

I. Personnel Present:

Name	Position	Company/Government

(List Additional Personnel on reverse side)

II. Submittals

1. Review Submittals and/or submittal log 4288. Have all submittals been approved? Yes___ No___
If No, what items have not been submitted?

a.
_____
b.
_____
c.
_____

2. Are all materials on hand? Yes___ No___ If No, what items are missing?

a.
_____
b.
_____
c.
_____

PREPARATORY PHASE CHECKLIST FORM (CONT'D)

3. Check approved submittals against delivered material. (This should be done as material arrives.) Comments:

_____
_____
_____
_____

III. Material storage

Are materials stored properly? Yes___ No___
If No, what action will be taken?

_____
_____
_____
_____

IV. Specifications:
1. Review each paragraph of specifications.

_____
_____
_____
_____

2. Discuss procedure for accomplishing the work. (Include labor and equipment to be used)

_____
_____
_____
_____

3. Clarify any differences from specifications.

_____
_____
_____

V. Preliminary Work - Ensure preliminary work is correct.

If not, what action will be taken?

_____
_____
_____
_____

PREPARATORY PHASE CHECKLIST FORM (CONT'D)

VI. Testing

1. Identify test to be performed, frequency and by whom.

_____
_____
_____

2. When required?

_____
_____
_____

3. Where required?

_____
_____
_____

4. Review Testing Plan.

_____
_____
_____

VII. Safety

1. Review applicable portion of COE EM 385-1-1.

_____
_____
_____

2. Activity Hazard Analysis Approved? Yes___ No___

3. All equipment checked and checklists recorded? Yes___ No___

If not, what action will be taken?

_____

VIII. Corps of Engineers comments during meeting.

_____
CQC Representative

INITIAL PHASE CHECKLIST FORM

Contract No.: W912P8-__-__-____ Date: _____

Definable Feature:

_____

Government Representative Notified 48 Hours in advance Yes___ No___

I. Personnel Present:

Name	Position	Company/Government

(List Additional Personnel on Reverse Side)

II. Is work in full compliance with plans, specifications and submittals. Are procedures and quality control measures being used acceptable.

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

INITIAL PHASE CHECKLIST FORM (CONT'D)

III. Preliminary work. Ensure preliminary work is complete and correct. If not, what action will be taken?

_____
_____
_____
_____

IV. Establish Level of Workmanship.

1. Where is work located?

_____

2. Quantity of work performed?

_____

3. Is a sample panel required? Yes___ No___
4. Will the initial work be considered as a sample? Yes___ No___

V. Are standards of acceptance mutually agreed upon? Resolve any differences.

_____
_____
_____
_____
_____

VI. Check Safety.

Review job condition using COE EM 385-1-1 and job hazard analysis. Comments:

_____
_____
_____
_____
_____

_____
CQC Representative

DEFICIENCY REPORT

Contract No.: W912P8-__-__-____ DCR NO.: _____________

Project Name:____

Contractor: ____

Description of Deficiency:

____
____
____
____
____
____
____
____
____

Sketch Attached: Yes___ No___

Issued By: ____ Date: ______________

Approved and Logged By: ______________________________________ Date: ______________
CQCM

~~~~~~

Planned Corrective Action:

____
____
____
____
____
____
____
____

CO or Representative: ____ Date: ____________

CQCM: ____ Date: ____________

Corrective Action Implemented: ___________________________________ Date: ____________
Project Super.

Corrective Action Inspected: _____________________________________ Date: ____________
CQCM
~~~~~~

DEFICIENCY REPORT TRACKING LOG

Contract No. W912P8-__-__-____

DR NUMBER	DATE ISSUED	ISSUED BY (Initial)	WORK FEATURE (See DR Report for details)	DATE CORRECTED	DATE INSPECTED	INSPECTOR (INITIAL)

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SECTION 01 57 20.00 12

ENVIRONMENTAL PROTECTION

PART 1 GENERAL

1.1 SCOPE

The work covered by this section consists of furnishing all labor, materials and equipment, and performing all work required for the prevention of environmental pollution and the handling, removal, transportation and disposal of any hazardous and/or regulated solid waste generated during and as the result of construction operations under this contract except for those measures set forth in other provisions of these specifications. For the purpose of this specification, environmental pollution is defined as the presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare; unfavorably alter ecological balances of importance to man; or degrade the utility of the environment for esthetic and recreational purposes. The control of environmental pollution requires consideration of air, water, and land, and involves noise, solid waste-management, management of radiant energy and radioactive materials, as well as other pollutants including hazardous wastes, materials, substances and chemicals.

1.2 APPLICABLE REGULATIONS

In order to prevent, and to provide for abatement and control of any environmental pollution arising from construction activities in the performance of this contract, the Contractor and his subcontractors shall comply with the Louisiana Pollution Discharge Elimination System (LPDES) General Permit requirements as specified in Section 01 57 23.00 12 STORM WATER POLLUTION PREVENTION PLAN, all applicable Federal, State, and Local laws, and regulations as well as USACE regulations concerning environmental pollution control and abatement and any regulations referred to in the following paragraphs. For hazardous wastes, materials, substances and chemicals applicable regulations shall include, but are not limited to, 29 CFR 1910.106, 29 CFR 1910.120, 40 CFR 260, 40 CFR 279, 40 CFR 355, 40 CFR 372-SUBPART D, 49 CFR 171 - 178 and EM 385-1-1, LAC 33:V, and LAC 33:VII.

1.3 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.

LOUISIANA ADMINISTRATIVE CODE (LAC)

LAC 33:V	Environmental Quality: Hazardous Waste and Hazardous Materials
LAC 33:VII	Environmental Quality: Solid Waste

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

29 CFR 1910.106	Flammable and Combustible Liquids

29 CFR 1910.120	Hazardous Waste Operations and Emergency Response
33 CFR 153.203	Procedure for the Notice of Discharge
40 CFR 260	Hazardous Waste Management System: General
40 CFR 261	Identification and Listing of Hazardous Waste
40 CFR 262	Standards Applicable to Generators of Hazardous Waste
40 CFR 268	Land Disposal Restrictions
40 CFR 279	Standards for the Management of Used Oil
40 CFR 355	Emergency Planning and Notification
40 CFR 372-SUBPART D	Specific Toxic Chemical Listings
49 CFR 171	General Information, Regulations, and Definitions
49 CFR 171 - 178	Hazardous Materials Regulations

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1	(2008) Safety -- Safety and Health Requirements

1.4 MEASUREMENT AND PAYMENT

1.4.1 Environment Protection

No separate measurement or payment will be made for environment protection, including protection of fish and wildlife. Payment for the work covered under this section shall be distributed throughout the existing bid items.

1.4.2 Non-Regulated Waste

No separate measurement or payment will be made for the work associated with and the disposal of non-regulated debris not specifically covered elsewhere. Payment for the work associated with the disposal of non-regulated debris not specifically covered elsewhere shall be distributed throughout the existing bid items.

1.4.3 Hazardous/Regulated Waste

(a) If the Contractor generates hazardous and/or regulated solid wastes through his/her actions, no separate measurement or payment will be made for handling, removal, transportation and disposal of hazardous and/or regulated solid wastes. Payment for the work associated with and the disposal of hazardous/regulated solid waste generated by the Contractor shall be distributed throughout the existing bid items.

(b) If the Contractor uncovers an existing hazardous/regulated waste not Contractor generated, not shown on the drawings, and not specified

herein, the Contractor shall notify the Contracting Officer's Representative immediately. Payment for handling, removal, transportation and disposal of hazardous and/or regulated solid wastes not Contractor generated, not shown on the drawings, and not specified herein will be made as an equitable adjustment in contract price under the Contract Clause in Section 00700, entitled "CHANGES (FAR 52.243-4)."

(c) An abandoned well and dump site are indicated on the plan drawings. While the potential for uncovering hazardous and/or regulated waste is low, the sites should be included in the Contractors Environmental Protection Plan. The plan should include methods or protocol for response.

1.5 QUALITY CONTROL

1.5.1 General

The Contractor shall establish and maintain quality control for environment protection to assure compliance with contract specifications and maintain records of his/her quality control for all construction operations including but not limited to the following:

(1) Submit plan of Environmental Pollution Control Plan/Environmental Protection Plan. For Contractor work activities (such as painting, metal finishing, etc.) that will involve bringing hazardous chemicals, hazardous substances or hazardous materials onto the project site, include in the plan a Hazard Communication Program and Safe Storage Plan. For Contractor activities that anticipate generation of hazardous wastes at the project site, include in the plan a waste identification / determination and waste disposal plan. For Contractor on-site activities that pose a risk of an oil or hazardous substance spill, include in the plan a Spill Reporting and Response Plan.

(2) Procure applicable Federal, State, and Local regulations on pollution control.

(3) Air Pollution - Checks made on dust, smoke, and noise.

(4) Water Pollution - Checks made on disposal of water, oil, etc.

(5) Land Pollution - Checks made on disposal of debris, restoration of temporary construction sites, etc.

(6) Training Course for Employees.

1.5.2 Reporting

The original and two copies of these records, as well as the records of corrective action taken, shall be furnished the Government daily. Format of report shall be as prescribed in Section 01 45 04.00 10 CONTRACTOR QUALITY CONTROL.

1.6 NOTIFICATION

The Contracting Officer will notify the Contractor in writing of any non-compliance with the foregoing provisions and the action to be taken. The Contractor shall, after receipt of such notice, immediately take corrective action. Such notice, when delivered to the Contractor or

his/her authorized representative at the site of the work, shall be deemed sufficient for the purpose. If the Contractor fails or refuses to comply promptly, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. The Contractor shall make no part of the time lost due to any such stop orders the subject of a claim for extension of time or for excess cost of damages.

1.7 SUBCONTRACTORS

Compliance with the provisions of this section by subcontractors will be the responsibility of the Contractor.

1.8 IMPLEMENTATION

Within 10 days after receipt of Notice of Award, or otherwise directed below, the Contractor shall:

(1) Submit in writing his/her proposals for implementing environmental pollution control at the project site, disposal of debris, non-hazardous wastes and hazardous wastes generated at the project site as well as storage and management of regulated materials, substances and chemicals brought onto and used at the project site.

(2) Meet with representatives of the Contracting Officer to develop mutual understanding relative to compliance with this provision and administration of the environmental pollution control program.

(3) If applicable, submit a plan for the identification, handling, removal, transportation and disposal of hazardous and/or regulated solid wastes generated because of the Contractor's operation.

1.8.1 Environmental Assessment of Contract Deviations

If the Contractor proposes a deviation from the drawings or specifications (e.g., proposed borrow, disposal areas, staging areas, alternate access routes etc) for his convenience, the Contractor shall notify the Contracting Officer or its representative in writing. The Contractor is cautioned that any deviation from the drawings or specifications is subject to all applicable Federal and state environmental laws and regulations. Compliance with these environmental laws and regulations may require additional National Environmental Policy Act (NEPA) documents, cultural resources surveys, coordination with the Louisiana State Historical Preservation Officer, water quality certification, modification of the Federal Consistency determination, etc. The Government is ultimately responsible for environmental compliance; therefore, the Government will determine the additional environmental coordination and documentation necessary for proposed deviation to the Government furnished disposal areas. For any environmental investigations the Government is to perform on area outside of Government furnished rights of way, the Contractor shall provide sufficient rights of entry. The Contracting Officer will advise the Contractor of the additional environmental coordination and documentation that must be completed prior to the use of the contractor furnished right of way. The Government shall be responsible for any additional environmental compliance; however, the Contractor may conduct specific tasks identified by the Government. The Government will offer advice and assistance to the Contractor in conducting these tasks. Depending on the environmental impact of the proposed deviation, obtaining the coordination and documentation, may not be approved or could take as much as 180 days for approval by the Government. The Government must

review, approve and ensure distribution of all environmental compliance documentation and ensure all comments on the same have been resolved before any utilization of any areas outside of the Government furnished right of way. The Contractor shall reimburse the Government for actual expenses incurred for assistance in completing or attempting to complete additional environmental coordination and documentation which expenses will not exceed one hundred thousand ($100,000) dollars. There is no guarantee that environmental compliance will be obtained; therefore, the Contractor shall assume all risks and liabilities associated with pursuing a deviation. Any delays resulting from the deviation and/or the environmental coordination and documentation shall not be made the basis of any Contractor claim for increase in the contract cost and/or increase in contract time. Deviations will be at the Contractor's sole risk and liability, including, but not limited to, such liabilities associated with items such as hazardous substances regulated under the Comprehensive Environmental Response, Compensation and Liability Act (42 U.S.C 9601 et. Seq.), and at no cost to the Government. Government assistance in obtaining additional environmental clearances does not relieve the Contractor of responsibility for complying with other Federal, state or local licenses and permits.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.1 PROTECTION OF LAND RESOURCES

3.1.1 General

The land resources within the project boundaries and outside the limits of permanent work performed under this contract shall be preserved in their present condition or be restored to a condition after completion of construction that will appear to be natural and not detract from the appearance of the project. The Contractor shall confine his/her construction activities to areas defined by the plans or specifications, including borrow areas to be cleared. The following additional requirements are intended to supplement and clarify the requirements of Section 00700, Contract Clauses entitled, "CLEANING UP (FAR 52.236-12);" "PROTECTION OF EXISTING VEGETATION, STRUCTURES, EQUIPMENT, UTILITIES, AND IMPROVEMENTS (FAR 52.236-9);" and "OPERATIONS AND STORAGE AREAS (FAR 52.236-10)."

3.1.2 Prevention of Landscape Defacement

Except in areas to be cleared and as provided in paragraph "Temporary Excavation and Embankments," the Contractor shall not deface, injure, or destroy trees or shrubs, nor remove or cut them without the approval of the Contracting Officer. Felling of trees shall be performed in such a manner as to avoid damage to trees to be left standing. Where trees may possibly be defaced, bruised, injured, or otherwise damaged by the Contractor's operations or equipment; he shall protect adequately such trees. Earth that is displaced into uncleared areas shall be removed. All monuments and markers shall be protected before beginning operations near them. Any trees or other landscape feature scarred or damaged by the Contractor's equipment or operations shall be restored as nearly as possible to its original condition at the Contractor's expense. Trees that are scarred shall be immediately painted with an acceptable tree wound paint. Any trees that are damaged beyond restoration shall be removed and disposed of as directed in paragraph "DISPOSAL OF NON-REGULATED WASTE."

3.1.3 Temporary Excavation and Embankments

If the Contractor proposes to construct temporary roads or embankments and excavation for plant and/or work areas, he shall obtain approval of the Contracting Officer prior to start of such temporary work.

3.1.4 Post-Construction Cleanup or Obliteration

The Contractor shall obliterate all signs of temporary construction facilities such as haul roads, work areas, structures, foundations of temporary structures, and stockpiles of excess or waste materials upon completion of construction. The Contractor will be required to restore the construction area to near natural conditions that will permit the growth of vegetation.

3.1.5 Recording and Preserving Historical and Archeological Finds

When any item having apparent historical or archeological interest is discovered in the course of any construction activities, then no work will proceed in the area containing these cultural resources until a USACE archaeologist has been notified and final coordination with the State Historic Preservation Officer has been completed. The Contractor will leave the archeological find undisturbed and shall immediately report the find to the Contracting Officer so that the proper authorities may be notified.

3.2 PROTECTION OF WATER RESOURCES

3.2.1 Contamination of Water

The Contractor shall not pollute lakes, ditches, rivers, bayous, canals, groundwater, waterways, or reservoirs with fuels, oils, bitumens, calcium chloride, insecticides, herbicides, or other similar materials harmful to fish, shellfish, or wildlife, or materials which may be a detriment to outdoor recreation.

3.2.2 Disposal of Materials

The methods and locations of disposal of materials, wastes, effluents, trash, garbage, oil, grease, chemicals, etc., within the right-of-way limits shall be such that harmful debris will not enter lakes, ditches, rivers, bayous, canals, groundwater, waterways, or reservoirs by erosion, and thus prevent the use of the area for recreation or present a hazard to wildlife.

3.2.3 Erosion Control

Surface drainage from cuts and fills within the construction limits, whether or not completed, and from borrow and waste disposal areas, shall, if turbidity producing materials are present, be held in suitable sedimentation ponds or shall be graded to control erosion within acceptable limits. Temporary erosion and sediment control measures as specified in Section 01 57 23.00 12 STORM WATER POLLUTION PREVENTION PLAN, shall be provided and maintained until permanent drainage and erosion control facilities are completed and operative. The area of bare soil exposed at any one time by construction operations shall not exceed that necessary to perform the work. Stream crossings by fording with equipment shall be limited to control turbidity and in areas of frequent crossings temporary culverts or bridges shall be installed. Any temporary culverts or bridges

shall be removed upon completion of the project. Fills and waste area shall be constructed by selective placement to eliminate silts or clays on the surface that will erode and contaminate adjacent streams.

3.3 PROTECTION OF FISH AND WILDLIFE

The Contractor shall at all times perform all work and take such steps required to prevent any interference of disturbance to fish and wildlife. The Contractor will not be permitted to alter water flows or otherwise disturb native habitat adjacent to the project area that are critical to fish or wildlife. Colonial nesting wading birds (including but not limited to heron, egrets and ibis) and bald eagles may be found at the project site and should be avoided to reduce the risk of injuring birds. The nesting activity period general extends from February 15 through September 15 for wading bird and September to May for bald eagles. Presence of nesting wading birds or nesting bald eagles must be immediately reported to Beth Nord at (504)862-21676. If nests of these birds are present at the work area; a no work distance restriction of 1000 feet for colonial nesting wading birds and a distance restriction of 660 feet from a nesting bald eagle must be implemented. Coordination by New Orleans District personnel with the U.S Fish and Wildlife Service may result in a reduction of no-work distance restriction depending on the species of birds found nesting at the work site. The contractor should note that no federally listed birds are known to occur in the project area. It should also be noted that all of these birds prefer to avoid human presence/ disturbances reducing the potential of stoppages of work.

3.4 JANITOR SERVICES

The Contractor shall furnish daily janitorial services for all the offices, shops, laboratories, or other buildings being used by the Contractor or Government employees, whether existing or Contractor furnished, and perform any required maintenance of the facilities and grounds during the life of the contract. Toilet facilities shall be kept clean and sanitary at all times. Services shall be performed at such a time and in such a manner to least interfere with the operations but will be accomplished only when the buildings are in daily use. Services shall be accomplished to the satisfaction of the Contracting Officer. The Contractor shall also provide daily trash collection and cleanup of the buildings and adjacent outside areas, snow removal as required, and shall dispose of all discarded debris, aggregate samples and concrete test samples in a manner approved by the Contracting Officer.

3.5 DISPOSAL OF NON-REGULATED DEBRIS

All debris resulting from construction operations on this contract shall be disposed of in accordance with Section 31 11 00.00 12 CLEARING AND GRUBBING, paragraph "DISPOSAL OF DEBRIS".

3.6 DISPOSAL OF HAZARDOUS AND/OR REGULATED SOLID WASTES

If any hazardous or regulated solid wastes will be generated as a result of the Contractor's operations, the Contractor shall submit a plan that details the proper handling, removal, transportation and disposal of such wastes. The plan shall identify what types of hazardous and/or regulated solid wastes will be generated and shall list the hazards involved with each waste. All waste generated on-site by the Contractor must be properly identified within 30 days of generation. No regulated wastes shall be allowed to accumulate on-site for more than 90 days. Regulated solid

wastes are those listed in the LAC 33:VII. The plan shall include Material Safety Data Sheets (MSDS), if applicable, for all wastes expected to be generated. The plan shall include, but not be limited to the following:

(a) Hazardous waste shall be place in closed containers and shall be shielded adequately to prevent dispersion of the waste by wind or water. Any evidence of improper storage shall be cause for immediate shutdown of the project until corrective action is taken.

(b) Non-hazardous waste shall be stored in containers separate from hazardous waste storage areas.

(c) All hazardous waste shall be transported by a licensed transporter in accordance with LAC 33:V and 49 CFR 171, Subchapter C.

(d) All non-hazardous waste shall be transported in accordance with local regulations regarding waste transportation.

(e) In addition to the number of manifest copies required by LAC 33:V, one copy of each manifest will be supplied to the Contracting Officer prior to transportation.

(f) The plan shall identify what types of hazardous and/or regulated solid wastes will be generated and shall list the hazards involved with each waste.

3.6.1 Hazardous Wastes

For the handling, removal, transportation and disposal of any generated hazardous wastes, the plan shall conform to the requirements of 40 CFR 260, 49 CFR 171 - 178 as well as other applicable Federal, State and Local regulations. All employees of the Contractor of his/her Subcontractors that will be directly involved in the handling and/or removal of hazardous wastes shall be trained in accordance with 29 CFR 1910.120. In addition, the employees shall have undergone a medical evaluation in accordance with 29 CFR 1910.120. The Contractor shall include copies of employees' certifications and medical examinations as part of the plan specified herein. The plan shall also address the proper Personnel Protective Equipment (PPE) that the employees will be required to wear during the handling and removal of hazardous wastes. The Contractor shall obtain an EPA ID# and Hazardous Waste Disposal Manifests and shall sign the manifests as the generator. Wastes shall be transported via state and Federal approved hazardous waste transporter and disposed of at a state and Federal approved temporary, storage and disposal (TSD) facility. Copies of licenses and certifications of the transporter and TSD shall be included in the plan. The plan shall list the name and address of each transporter and TSD to be utilized. The Contractor shall be responsible for any sampling and analysis required by the TSD for characterization purposes. The Contractor shall submit to the Contracting Officer completed copies of all Hazardous Waste Disposal Manifests within five (5) days after ultimate disposal at the TSD. Other regulations applicable to the handling, removal, transportation and disposal of hazardous wastes are: 40 CFR 261; 40 CFR 262; 40 CFR 268; and LAC 33:V.

3.6.2 Regulated Solid Wastes

For the handling, removal, transportation and disposal of any generated regulated solid wastes, the plan shall conform to the requirements of LAC 33:VII. Solid wastes shall be transported to a Federal and state

approved TSD, oil recycling program or Industrial Type I Landfill. The Contractor shall identify in the plan how he/she intends to dispose of each solid waste. The plan shall include the name, address, licenses and certifications of each disposal facility that will be used. If disposal manifests are required, the Contractor shall sign them as the generator. The Contractor shall be responsible for any sampling and analyses that may be required by the disposal facility(ies) for characterization purposes. Licenses and certifications of the transporter and disposal facilities shall be included in the plan. The Contractor shall submit to the Contracting Officer a completed copy of any waste disposal manifests within five (5) days after ultimate disposal.

3.6.3 Laboratory Accreditation

All laboratory testing for waste determinations shall be performed by a laboratory which has Accreditation-Applied status with the Louisiana Department of Environmental Quality (LDEQ) laboratory certification program. The name and address of the laboratory shall be included in the "Waste Classification, Handling, and Disposal Plan."

3.7 MAINTENANCE OF POLLUTION CONTROL FACILITIES

During the life of this contract the Contractor shall maintain all facilities constructed for pollution control under this contract as long as the operations creating the particular pollutant are being carried out or until the material concerned has become stabilized to the extent that pollution is no longer being created. Early in the construction period the Contractor shall conduct a training course that will emphasize all phases of environmental protection.

3.8 REPORTING OF POLLUTION SPILLS

In the event that an oil spill or chemical release occurs during the performance of this contract, the Contractor is required to contact the National Response Center, telephone number 1-800-424-8802 as soon as possible, or if telephone communication is not possible, the nearest U.S. Coast Guard office may be contacted by radio to report the spill, (33 CFR 153.203). The Contractor shall comply with any instructions from the responding agency concerning containment and/or cleanup of the spill.

-- End of Section --

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SECTION 01 57 23.00 12

STORM WATER POLLUTION PREVENTION PLAN

PART 1 GENERAL

1.1 SCOPE

The work specified in this section consists of the Contractor implementing, and diligently pursuing all measures required in the Storm Water Pollution Prevention Plan (SWPPP). The SWPPP consists of this Section, 01 57 23.00 12, and any and all references and attachments including existing and future signed certification statements. The purpose of the SWPPP is to control soil erosion and the resulting sediment to the extent necessary to prevent sediment from leaving the contract rights-of-way and prevent pollution of any water body caused by the runoff from the areas of construction activities under this contract, under the terms of PERMIT NO. LAR100000 copy attached at the end of this section), and as specified herein and shown on the drawings. The requirements of these specifications are supplemental to and shall become part of the overall Environmental Protection Plan required by Section 01 57 20.00 12 ENVIRONMENTAL PROTECTION. The Contractor shall review the SWPPP to determine requirements for compliance. In addition, the Contractor shall ascertain that his subcontractors have reviewed the plan, and that they comply with its provisions. The Contractor shall ensure that all subcontractors sign, "Certification Statements #2 and #3" (blank forms attached at the end of this section).

1.2 REFERENCES

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

LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY (LDEQ)

PERMIT NO. LAR100000	(2009) Storm Water General Permit for Construction Activities, Five (5) Acres or More

1.3 MEASUREMENT AND PAYMENT

1.3.1 SWPPP

No separate measurement or payment will be made for work the storm water pollution prevention plan required by this section, except as specified in paragraph, "Truck Wash-Down Racks". Price and payment shall be distributed amongst the existing items.

1.3.2 Truck Wash-Down Racks

Measurement and payment for truck wash-down racks will be as specified in Section 01 57 23.01 12 TRUCK WASH-DOWN RACKS.

1.4 DEFINITIONS

a. Construction Owner - The construction owner is the party that has operational control over plans and specifications including the ability to make changes to those items. The New Orleans District (Government) is the construction owner.

b. Construction Operators - The construction operators are the party having control over the plans and specifications and the party having day-to-day operational control over those activities at a project site which are necessary to ensure compliance with the SWPPP or other permit conditions. Both the Government and the Contractor are the construction operators.

c. Notice of Intent (NOI) - A document that is completed and submitted to the Louisiana Department of Environmental Quality as application for coverage to discharge under the PERMIT NO. LAR100000. (Copy provided at the end of this section.)

d. Notice of Termination (NOT) - A document that is completed and submitted to the Louisiana Department of Environmental Quality to terminate permission to discharge under the PERMIT NO. LAR100000. The NOT must be filed within 30 days after final stabilization of the construction site has been achieved or the Contractor is no longer the construction operator. (Copy provided at the end of this section.)

1.5 GENERAL

The Contractor shall implement the Storm Water Pollution Prevention Plan (SWPPP) specified in a manner which will meet the requirements of Section 01 57 20.00 12 ENVIRONMENTAL PROTECTION, and the requirements of the Louisiana Pollution Discharge Elimination System (LPDES) permit, PERMIT NO. LAR100000 effective October 1, 2009 .

1.5.1 Environmental Assessment of Contract Deviations

The Contractor is advised that deviations from the SWPPP could result in the requirement for the Government to reanalyze the project from an environmental standpoint. Deviations from the SWPPP erosion control requirements as specified herein and as shown on the drawings which may have an environmental impact will require an extended review, processing, and approval time by the Government.

1.5.2 Notice Of Intent

Upon preparation of a complete SWPPP, the NOI will be submitted by the Government to the LDEQ as application for the Government's coverage under the terms of PERMIT NO. LAR100000. A copy of the Government's NOI, will be provided to the Contractor at the Pre-construction Conference for the Contractor's use in preparing their NOI. If a specific LPDES permit applicable to this construction item has been received from the LDEQ in response to the NOI, a copy of the specific LPDES permit will also be provided to the Contractor. The Contractor shall make any necessary modification to this SWPPP; attach the Construction Owner / Operator certification statement provided at the end of this section to the SWPPP; and certify by signing the statement as the construction operator. The Contractor shall then submit an NOI to the LDEQ as application for his/her coverage under the terms of PERMIT NO. LAR100000, prior to initiating any construction activities. Certified mail is recommended for Contractor's

proof of submittal. A copy of the Contractor's NOI submittal shall be provided to the Contracting Officer's representative at the time of submittal. LDEQ will provide a specific LPDES permit to the Contractor in response to that NOI submittal. The NOI's of both the Contractor and the Government, as well as the specific permits in response to the NOI, shall be posted at the job site by the Contractor. (Forms are attached at the end of this Section.)

1.6 RECORD RETENTION REQUIREMENTS

1.6.1 Documents

The Contractor shall retain copies of the SWPPP and all reports required by the general permit, and all records of data used to complete the NOI, for a period of at least three years from the date that the construction site is finally stabilized. Records of the NOI as well as any data used to complete it, the SWPPP, and any reports required by PERMIT NO. LAR100000 shall be retained by the permittee for at least three years from the date that the site is finally stabilized.

1.6.2 Plan Accessibility

A copy of the SWPPP and a copies of all permits received, shall be retained at the construction site (or other local location accessible to the State Administration Authority and the public) from the date of construction initiation to the date of final stabilization. The Contractor shall have a copy of the plan available at a central location on-site for the use of all operators and those identified as having responsibilities under the plan whenever they are on the construction site. A notice shall be posted near the main entrance to the construction site with the following information: (1) the LPDES permit number for the project or a copy of the NOI if a permit has not yet been assigned; (2) the name and telephone number of a local contact person; (3) a brief description of the project; and (4) the location of the SWPPP if the site is inactive or does not have an on-site location to store the plan.

1.6.3 Activity Records

The dates of the following activities shall be recorded:

(1) Major grading activities occurred.

(2) Construction activities temporarily or permanently ceased.

(3) Stabilization measures were initiated.

1.6.4 LDEQ Correspondence

Any written correspondence with the LDEQ concerning the NOI, NOT, SWPPP, or discharges from any facility covered under PERMIT NO. LAR100000, shall be identified by permit number, if one has been assigned, and sent to the address below:

Louisiana Department of Environmental Quality
Office of Environmental Services
P.O. Box 4313
Baton Rouge, LA 70821-4313

Attn: Permits Division

1.7 MAINTENANCE AND SURVEILLANCE FEES

In accordance with the Contract Clause in Section 00700 entitled, "Permits And Responsibilities (FAR 52.236-7)," the Contractor shall, without additional expense to the Government, be responsible for paying any state required annual maintenance and surveillance fee for work associated with coverage under PERMIT NO. LAR100000.

1.8 EROSION AND SEDIMENT CONTROLS

The controls and measures required for controlling sediment during construction are described below.

1.8.1 Stabilization Controls

The stabilization practices to be implemented shall include fertilizing, seeding, and mulching as specified in Section 32 92 19.04 12 TURF ESTABLISHMENT AND MAINTENANCE or any other temporary measure to restrict erosion from the construction site. On the daily CQC Report, the Contractor shall record the dates when the major grading activities occur, (e.g., clearing and grubbing, excavation, embankment, and grading); when construction activities temporarily or permanently cease on a portion of the site; and when stabilization practices are initiated. Except as provided in paragraphs "Unsuitable Conditions" and "No Activity for Less Than 21 Days," stabilization practices shall be initiated as soon as practicable, but no more than 14 days, in any portion of the site where construction activities have temporarily or permanently ceased.

1.8.1.1 Unsuitable Conditions

Where the initiation of stabilization measures by the fourteenth day after construction activity temporarily or permanently ceases is precluded by unsuitable conditions caused by the weather, stabilization practices shall be initiated as soon as practicable after conditions become suitable.

1.8.1.2 No Activity for Less Than 21 Days

Where construction activity will resume on a portion of the site within 21 days from when activities ceased (e.g., the total time period that construction activity is temporarily ceased is less than 21 days), then stabilization practices do not have to be initiated on that portion of the site by the fourteenth day after construction activity temporarily ceased. Stabilization practices shall be initiated on that portion of the site by the fourteenth day in the case where construction activities will not resume within 21 days after construction activities have ceased.

1.8.2 Truck Wash-Down Racks

See Section 01 57 23.01 12 TRUCK WASH-DOWN RACKS.

PART 2 PRODUCTS NOT USED

PART 3 EXECUTION

3.1 INSTALLATION OF TRUCK WASH-DOWN RACKS

Operation of truck wash down racks shall not include use of detergents. Sediments resulting from operation of truck wash down racks shall not be

utilized within the Levee Design Section. It shall be disposed of as construction debris in Contracting Officer's Representative approved areas. Sediment retention measures shall be utilized as described in Section 01 57 23.01 12 TRUCK WASH DOWN RACKS.

3.2 WINDROWING

The Contractor shall place the cleared grass and small vegetation in a windrow along levee alignement location as shown on the drawings. Windrowing is a temporary structual practice to eliminate erosion and sediment runoff into the drainage canal and the flood side marsh. Sediment retention shall be utilized at the borrow source and the levee as decribed in 31 24 00.00 12 EMBANKMENT. Payment shall be in accordance with 31 11 00.00 12 "CLEARING AND GUBBING"

3.3 MAINTENANCE

The Contractor shall maintain the temporary and permanent vegetation, erosion and sediment control measures, and other protective measures in good and effective operating condition by performing routine inspections to determine condition and effectiveness, by restoration of destroyed vegetative cover, and by repair of erosion and sediment control measures and other protective measures.

3.4 INSPECTIONS

3.4.1 General

The Contractor shall inspect disturbed areas of the construction site, areas used for storage of materials that are exposed to precipitation that have not been finally stabilized, stabilization practices, structural practices, other controls, and area where vehicles exit the site at least once every fourteen (14) calendar days, before anticipated storm events (or series of storm events such as intermittent showers over one or more days) expected to cause a significant amount of runoff, and within 24 hours of the end of any storm that produces 0.5 inches or more rainfall at the site. Where sites have been finally stabilized, such inspection shall be conducted at least once every two weeks. The windrow shall be inspected throughout the contract or until removal as directed by the Contracting Officer. Close attention shall be paid to the repair of damaged or ineffective areas that would allow sediment and run-off into the flood side marsh.

3.4.2 Inspections Details

Disturbed areas shall be inspected for evidence of, or the potential for, pollutants entering the drainage system. Erosion and sediment control measures identified in the SWPPP shall be observed to ensure that they are operating correctly. Discharge locations or points shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters. Locations where vehicles exit the site shall be inspected for evidence of offsite sediment tracking.

3.4.3 Inspection Reports

For each inspection conducted, the Contractor shall prepare a report summarizing the scope of the inspection, name(s) and qualifications of personnel making the inspection, the date(s) of the inspection, major observations relating to the implementation of the SWPPP, maintenance

performed, and actions taken. The report shall be furnished to the Contracting Officer within 24 hours of the inspection as a part of the Contractor's daily CQC REPORT. A copy of the inspection report shall be maintained on the job site. Sample inspection reports (Exhibit D-2, Exhibit D-3, Exhibit D-4, and Table D-5) are included at the end of this section in Attachment C.

3.5 NOTICE OF TERMINATION

Upon stabilization and elimination of all storm water discharges authorized by PERMIT NO. LAR100000, or where the operator of all storm water discharges at a facility changes, a Notice of Termination (NOT) shall be certified and submitted by the Contractor to the Permits Division at the LDEQ. A copy of the NOT form is provided at the end of this section in Addendum C in Attachment A. Certified mail is recommended for proof of the NOT submittal. The NOT shall be submitted within 30 days of final stabilization of the construction site or when the Contractor is no longer the construction operator.

3.6 ADDITIONAL INFORMATION

(a) Job description. The work consists of clearing and grubbing; the partial degrading of an existing levee; constructing a levee enlargement; fertilizing, seeding and mulching all disturbed areas; removal and replacement of one ramp; borrow pit preparation and excavation; and all other incidental work.

(b) Activity sequence. The first order of work will be to clear and grub the flood side to recieve new levee and clear existing levee of grass. This will be conducted by a small dozer that cuts approximately 3-inches of soil along with grass and small vegetation. Grubbing is required under this contract for all overgrown areas requiring levee fill. Placement of earthen material will be the next sequence of work. A dozer will spread and grade clay material with small equipment, using the compacted fill method. Prior to fertilizing, seeding and mulching the ground will be prepared by tilling to a depth of at least 2-inches by plowing or disking.

(c) Disturbed area. The total project area is 180 acres. 147 acres are expected to be disturbed and receive fill during this construction.

(d) Runoff coefficient. The estimate of runoff coefficient for the project site is 0.3. There is approximately a 0.1 acre increase in impervious area after construction is completed.

(e) Location. The project is located on the west bank in Jefferson Parish, Louisiana, in the vicinity of Westwego, as depicted in the Location Map in the drawings. The drainage pattern on the protected side is toward interior canals. The flood side of the levee slopes to drain toward the marsh. Approximately 360-foot continuous width of existing levee will be disturbed. The large levee berms will absorb any run-off. The major pump stations are the Westwego Pump Station, Westminster Pump Station and the Ames Pump Station. Each absorb one-third of the project drainage flow. The Government-furnished borrow pit area is as shown on the drawings.

(f) Associated discharges. There are no industrial activities which discharge in the project area.

(g) Name of receiving waters / wetlands / special aquatic sites. Bayou Segnette is the nearest waterbody named on a topographic map to the construction site that will receive storm water discharges from the job.

(h) Permit requirements. Permit requirements are described in the copy of Permit No. LAR100000 attached at the end of this section.

(i) Endangered or threatened species concerns. The proposed action at the levee construction site and borrow area would have no effect on any threatened or endangered species or their critical habitat as none are known to occur in the proposed project area.

(j) National Register of Historic Places concerns. Previous investigations of the project areas did not identify any significant cultural resources. There are no National Register of Historical Place concerns.

CERTIFICATION STATEMENT #1

Any person, including the construction owner/operator, signing documents (the SWPPP, modifications to the SWPPP, or other reports) under Part VI.G. of PERMIT NO. LAR100000 shall make the following certification.

(Contract Title)

(Permit Number)

(Document being Certified, such as SWPPP)

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage this system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I also certify that a storm water pollution prevention plan, including both construction and post construction controls, has been prepared for the site in accordance with the permit and that such plan complies with approved State, Tribal and/or local sediment and erosion plans or permits and/or storm water management plans or permits. I am aware that signature and submittal of the Notice of Intent is deemed to constitute my determination of eligibility under one or more of the requirements of Permit Part I.A.3.e(1), related to the Endangered Species Act requirements. To the best of my knowledge, I further certify that such discharges and discharge related activities will not have an effect on properties listed or eligible for listing on the National Register of Historic Places under the National Historic Preservation Act, or are otherwise eligible for coverage under Part I.A.3.f of the permit. I am also aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature _____

Printed Name _____

Title _____

Company _____

Date _____

Telephone _____

CERTIFICATION STATEMENT #2

Any Contractor or subcontractor implementing any part of this plan must prepare and sign a copy of the following certification.

(Contract Title)

(Permit Number)

I certify, under penalty of law, that I understand the terms and conditions of the Louisiana Pollutant Discharge Elimination System (LPDES) general permit that authorizes storm water discharges associated with construction activity from the construction site identified as part of this certification.

Firm Name: _____

Address: _____

_____ Telephone No: _____

Signature: _____ Title: _____

Date: _____

CERTIFICATION STATEMENT #3

Any Contractor or subcontractor that does not meet the definition of "operator" that will conduct activities that may impact the effectiveness of the SWPPP control measures must prepare and sign the following certification.

(Contract Title)

(Permit Number)

I certify, under penalty of law, that I will coordinate, through the contractor, owner, or directly, with the Contractor (s) identified in the pollution prevention plan having responsibility for implementing storm water control measures to minimize any impact my actions may have on the effectiveness of these storm water control measures.

Firm Name: _____

Address: _____

_____ Telephone No: _____

Signature: _____ Title: _____

Date: _____

-- End of Section --

Exhibit D-2

ARMY CORPS OF ENGINEERS

Storm Water Pollution Prevention Plan

Construction General Permit
Inspection and Maintenance Report Form

To be completed every 14 days and within 24 hours of a rainfall event of 13 mm (0.5 inch) or more

Project:_____

Inspected By: _____ Date:_____

Inspectors Qualifications:_____

_____

_____

_____

Days Since Last Rainfall:_____ Amount of Last Rainfall_____mm (Inches)

Structural Controls

AREA	DATE SINCE LAST DISTURBED	DATE OF NEXT DISTURBANCE	STABILIZED (yes/no)	STABILIZED WITH	CONDITION

STABILIZATION REQUIRED:

_____

_____

_____

TO BE PERFORMED BY: _____ ON OR BEFORE:_____

Exhibit D-3

ARMY CORPS OF ENGINEERS

Storm Water Pollution Prevention Plan

Construction General Permit
Inspection and Maintenance Report Form

To be completed every 14 days and within 24 hours of a rainfall event of 13 mm (0.5 inch) or more

Project:_____

Inspected By: _____ Date:_____

Inspectors Qualifications:_____

_____

_____

_____

Days Since Last Rainfall:_____ Amount of Last Rainfall_____mm (Inches)

Vegetative Controls

AREA	DATE SINCE LAST DISTURBED	DATE OF NEXT DISTURBANCE	STABILIZED (yes/no)	STABILIZED WITH	CONDITION

STABILIZATION REQUIRED:

_____

_____

_____

TO BE PERFORMED BY: _____ ON OR BEFORE:_____

Exhibit D-4

ARMY CORPS OF ENGINEERS

Storm Water Pollution Prevention Plan

Construction General Permit
Inspection and Maintenance Report Form

To be completed every 14 days and within 24 hours of a rainfall event of 13 mm (0.5 inch) or more

Project:_____

Inspected By: _____ Date:_____

Inspectors Qualifications:_____

_____

_____

_____

Days Since Last Rainfall:_____ Amount of Last Rainfall_____mm (Inches)

Management Controls

AREA	ACTIVITY DESCRIPTION	MAINTENACE REQUIRED	STABILIZED (yes/no)	STABILIZED WITH	CONDITION

STABILIZATION REQUIRED:

_____

_____

_____

TO BE PERFORMED BY: _____ ON OR BEFORE:_____

Table D-5

EQUIPMENT MAINTENANCE AND INSPECTION

Inspection/Maintenance Conducted and Comments/Observations	Location/Equipment	Conducted By	Date

To: **Prospective Applicants for a Stormwater General Permit Associated with Construction Activity Greater than 5 Acres**

Attached is a **Stormwater General Permit Associated with Construction Activity Greater than 5 Acres Notice of Intent (NOI) CSW-G,** for a Louisiana Pollutant Discharge Elimination System (LPDES) permit, authorized under EPA's delegated NPDES program under the Clean Water Act. To be considered complete, every item on the form must be addressed and the last page signed by an authorized company agent.

Three copies (one original and two copies) of your **completed NOI** should be submitted to:

Department of Environmental Quality
Office of Environmental Services
Post Office Box 4313
Baton Rouge, LA 70821-4313
Attention: Permits Division

Please be advised that completion of this NOI may not fulfill all state, federal, or local requirements for facilities of this size and type.

According to L. R. S. 48:385, any discharge to a state highway ditch, cross ditch, or right-of-way shall require approval from:

Louisiana DOTD Office of Highways Post Office Box 94245 Baton Rouge, LA 70804-9245 (225) 379-1301	AND	Louisiana DHH Office of Public Health 6867 Bluebonnet Road, Box 7 Baton Rouge, LA 70810 (225) 765-5044

A copy of the LPDES regulations may be obtained from the Department's website at http://www.deq.state.la.us/planning/regs/index.htm or by contacting the Office of Environmental Assessment, Regulations Development Section, Post Office Box 4314, Baton Rouge, Louisiana 70821-4314, phone (225) 219-3550.

After the review of the NOI, this Office will issue written notification to those applicants who are accepted for coverage under this general permit.

For questions regarding this NOI please contact the Water & Waste Permits Division at (225) 219-3181. For help regarding completion of this NOI please contact DEQ, Small Business Assistance at 1-800-259-2890.

STATE OF LOUISIANA
DEPARTMENT OF ENVIRONMENTAL QUALITY

Office of Environmental Services, Permits Division
Post Office Box 4313
Baton Rouge, LA 70821-4313
PHONE#: (225) 219-3181

LPDES NOTICE OF INTENT (NOI) TO DISCHARGE STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITY GREATER THAN 5 ACRES

(Attach additional pages if needed.)

Submission of this Notice of Intent constitutes notice that the party identified in Section I of this form intends to be authorized by an LPDES permit issued for stormwater discharges associated with construction activity in Louisiana. Submission of this Notice of Intent also constitutes that implementation of the Storm Water Pollution Prevention Plan required under the general permit will begin at the time the permittee commences work on the construction project identified in Section II below.

SECTION I - FACILITY INFORMATION

A. Permit is to be issued to the following: (must be a party having operational control over construction plans and specifications and /or a party having day-to-day operational control over those activities at a project site which are necessary to ensure compliance with the storm water pollution prevention plan or other permit conditions LAC 33:IX.2501.B and LAC 33:IX.2503.A and B).

1. Legal Name of Applicant
(Company, Partnership, Corporation, etc.) _____

Facility Name _____

Mailing Address _____

_____ Zip Code: _____

If applicant named above is not also the owner, state owner name, phone # and address.

_____

_____

Please check status: ☐ Federal ☐ Parish ☐ Municipal ☐ State ☐ Public ☐ Private ☐ Other: _____

2. Location of facility. Please provide a specific address, street, road, highway, interstate, and/or River Mile/Bank location of the facility for which the NOI is being submitted.

_____

City _____ Zip Code_____ Parish_____

Front Gate Coordinates:

Latitude- _____deg. _____min. _____sec. Longitude- _____deg. _____ min. _____sec.

Method of Coordinate Determination: _____
(Quad Map, Previous Permit, website, GPS)

Is the facility located on Indian Lands? ☐ Yes ☐ No

SECTION I – FACILITY INFORMATION (cont.)

A. Stormwater Pollution Prevention Plan Information.

1. Has the Stormwater Pollution Prevention Plan (SWPP) been prepared? (Do not submit SWPP with this NOI)
   ☐ Yes ☐ No
2. Indicate address of location of SWPPP if different from Project Location.

   Address _____

   City _____ State _____ Zip _____

B. Location Information

1. Estimated Construction Start Date: (mo/day/yr) _____
2. Estimated Construction Completion Date: (mo/day/yr) _____
3. Estimate of area to be disturbed (to nearest acre) _____
4. Is the project part of a larger development or subdivision? ☐ Yes ☐ No

   If yes, provide the name of the development or subdivision. _____

C. Discharge Information

1. If the discharge from the facility first enters a Municipal Separate Storm Sewer System (MS4), provide the name of the MS4.

   _____

2. Name of receiving Waterbody _____
3. Estimate of Likelihood of Discharge: (choose only one)
   ☐ Unlikely ☐ Once per month ☐ Once per week ☐ Once per day ☐ Continual
4. Based on the attached Endangered Species Guidance are there any listed endangered or threatened species in the project area?
   ☐ Yes ☐ No
5. Based on the attached Historic Properties Guidance, are any historic properties listed or eligible for listing on the National Register of Historic Places located on the facility or in proximity to the discharge?
   ☐ Yes ☐ No
6. Was the State Historic Preservation Office (see Part I.A.3.f of the permit) involved in your determination of eligibility?
   ☐ Yes ☐ No

SECTION II – LAC 33.I.1701 REQUIREMENTS

A. Does the company or owner have federal or state environmental permits identical to, or of a similar nature to, the permit for which you are applying in other states? (This requirement applies to all individuals, partnerships, corporations, or other entities who own a controlling interest of 50% or more in your company, or who participate in the environmental management of the facility for an entity applying for the permit or an ownership interest in the permit.)

☐ Permits in other states (list states): _____

☐ No other environmental permits.

B. Do you owe any outstanding fees or final penalties to the Department? ☐ Yes ☐ No

If yes, please explain.

_____

C. Is your company a corporation or limited liability company? ☐ Yes ☐ No

If yes, is the corporation or LLC registered with the Secretary of State? ☐ Yes ☐ No

CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage this system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I also certify that a storm water pollution prevention plan, including both construction and post construction controls, has been prepared for the site in accordance with the permit and that such plan complies with approved State, Tribal and/or local sediment and erosion plans or permits and/or storm water management plans or permits. I am aware that signature and submittal of the NOI is deemed to constitute my determination of eligibility under one or more of the requirements of Permit Part I.A.3.e(1), related to the Endangered Species Act requirements. To the best of my knowledge, I further certify that such discharges and discharge related activities will not have an effect on properties listed or eligible for listing on the National Register of Historic Places under the National Historic Preservation Act, or are otherwise eligible for coverage under Part I.A.3.f of the permit. I am also aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature _____

Printed Name _____

Title _____

Company _____

Date _____

Telephone _____

STATE OF LOUISIANA
DEPARTMENT OF ENVIRONMENTAL QUALITY

Office of Environmental Services, Permits Division
Post Office Box 4313
Baton Rouge, LA 70821-4313
Phone#: (225) 219-3181

LPDES NOTICE OF TERMINATION (NOT) OF COVERAGE UNDER LPDES GENERAL PERMIT FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY GREATER THAN 5 ACRES

SECTION I –PERMIT INFORMATION

Facility's Storm Water General Permit Authorization Number LAR10 ___ ___ ___ ___

Check here if you are no longer the Operator of the Facility ☐

Check here if the Storm water discharge associated with the construction activity is Being Terminated ☐

SECTION II – FACILITY OPERATOR INFORMATION

Name _____

Address _____

City _____

State _____ Zip _____ Phone _____

SECTION III – FACILITY/SITE LOCATION INFORMATION

Name of Project _____

Location of Project _____

City _____ State _____ Zip _____

Latitude-_____deg. _____min. _____sec. Longitude-_____deg. _____ min. _____sec.

Parish _____

SECTION IV – CERTIFICATION

I certify under penalty of law that all storm water discharges associated with construction activity from the identified facility that are authorized by a LPDES general permit have been eliminated or that I am no longer the operator of the facility or construction site. I understand that by submitting this Notice of Termination, I am no longer authorized to discharge storm water associated with industrial activity under this general permit, and that discharging pollutants in storm water associated with industrial activity to waters of the State is unlawful under the Clean Water Act where the discharge is not authorized by a LPDES permit. I also understand that the submittal of this Notice of Termination does not release an Operator from liability for any violation of this permit or the Clean Water Act.

Print Name _____ Date _____

Signature _____

GENERAL PERMIT FOR DISCHARGES OF STORM WATER FROM CONSTRUCTION ACTIVITIES FIVE (5) ACRES OR MORE

MASTER GENERAL PERMIT NO. LAR100000
AUTHORIZATION TO DISCHARGE UNDER THE
LOUISIANA POLLUTANT DISCHARGE ELIMINATION SYSTEM

Pursuant to the Clean Water Act, as amended (33 U.S.C. 1251 et seq.), and the Louisiana Environmental Quality Act, as amended (La. R. S. 30:2001 et seq.), rules and regulations effective or promulgated under the authority of said Acts, this Louisiana Pollutant Discharge Elimination System (LPDES) General Permit is reissued. This permit authorizes operators of storm water discharges from construction activities of five (5) acres or more, and defined dedicated support activities, to discharge to waters of the State, in accordance with the conditions and requirements set forth herein.

Only those operators who obtain coverage in accordance with Parts I and II of this permit are authorized under this general permit.

This permit shall become effective on 1 October 2009.

This permit and the authorization to discharge shall expire five years from the effective date of the permit.

Issued on

_____

Cheryl Sonnier Nolan
Assistant Secretary

LPDES GENERAL PERMIT
FOR STORM WATER DISCHARGES FROM CONSTRUCTION ACTIVITIES
FIVE (5) ACRES OR MORE

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Part I. COVERAGE UNDER THIS PERMIT

A. Applicability.

1. This permit authorizes discharges of storm water from construction activities that disturb 5 acres or more of total land area as defined in LAC 33:IX.2511.B.14.j and those construction site discharges designated by the State Administrative Authority as needing a storm water permit under LAC 33:IX.2511.A.1.e, except for discharges identified below under Permit Part I.A.3. Permit coverage is required from the "commencement of construction activities" until "final stabilization" as defined in Permit Part IX.

Construction activities regulated under this permit include clearing, grading, excavation operations, and/or adding fill material that result in the disturbance of five acres of land or more. Road and pipeline building and construction of residential houses, office buildings, industrial buildings, and runways are examples of construction activities.

The **clearing of land solely for agricultural purposes is NOT a regulated activity** so it is exempted from Louisiana Pollutant Discharge Elimination System (LPDES) permitting requirements. Projects on cultivated croplands are not regulated, as these are already "disturbed" areas.

Storm water discharges at field activities or operations associated with oil and gas exploration, production, processing, or treatment or transmission, are regulated in accordance with the latest provisions of LAC 33:IX.2511.A.

Repaving of roads and reworking of utility lines or pipelines are not regulated under this permit unless five or more acres of underlying and/or surrounding soil are cleared, graded or excavated as part of the operation. **A construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of the facility/structure.** If a construction activity is only performed to maintain its original purpose, then LPDES permit coverage under this general permit is not required to discharge storm water from that construction activity. Such activities include replacing structures that are due for and require maintenance. In order to qualify as a routine maintenance activity, the land disturbance should not go beyond the footprint of the previous structure. Examples of routine maintenance activities include the following.

Berm Repair or Topsoil Replacement Along Shoulders - placing berm material or topsoil on shoulders adjacent to pavement to eliminate drop-offs;
Bridge Abutment Repairs, Deck Overlays, and Deck Replacement;
Bridge Replacement without widening;
Chip Sealing – placing asphalt or polymer binder and stone on existing roads;
Culvert Replacement/Repair/Lining – replacing/repairing/relining a culvert with the same line, grade, and hydraulic capacity and within US Army Corps of Engineers Nationwide Permit (NWP) #3 parameters;

Curb Repairs – repairing existing curbing along a roadway;
Ditch Cleanout – maintaining or restoring original flow line and cross-section only;
Fence Repair/Replacement;
Full Depth Pavement Repairs – isolated repairs of pavement build-up down to sub-grade;
Guardrail Installation/Replacement – installing or repairing with minor grading work to create proper grade for end assemblies;
Lighting Maintenance;
Linear Grading – reshaping of graded shoulders to establish proper drainage away from pavement;
Loop Detector Repairs – repairing loop detectors in existing pavement;
Noise Wall Repair;
Partial Depth Pavement Repairs – isolated repairs of surface courses of pavement;
Pothole Filling;
Resurfacing – replacing several inches of asphalt wearing course by milling existing surface and replacing with new material;
Road Re-paving with new asphalt provided the activity does not expose soil to storm water;
Road Replacement without adding any lanes;
Sign Repair/Maintenance – installing or repairing traffic signs and poles/posts;
Signal Installation/Maintenance – installing or repairing traffic signals and poles/posts; and
Tree/Brush Removal – when it is considered a road maintenance activity.

To determine if construction activities at a particular site are regulated under this general permit you should determine the total amount of land area that will be disturbed during a construction project rather than the total land area owned at a project site. Construction activities which require storm water permit coverage under this general permit are activities that result in the disturbance of five or more acres of total land area, including smaller areas that are part of a larger plan of development or sale that cumulatively disturb at least five acres.

Any discharge authorized by a different LPDES permit may be commingled with discharges authorized by this permit. Any permittee covered by an individual permit may request that the individual permit be terminated if the permitted source or activity is also eligible for coverage under this general permit. Upon written notification by this Office, the individual permit will be terminated and the permittee will be covered by this general permit.

An annual maintenance and surveillance fee will be assessed for coverage under this permit.

Assistance/additional information about the permit may be obtained by contacting the Water Permits Division, Municipal and General Water Permits Section, at (225) 219-3181, or at the address in Part II.C below.

2. This permit also authorizes discharges from support activities related to a construction site (e.g., concrete or asphalt batch plants, equipment staging yards, material storage areas, excavated material disposal areas, borrow areas, etc.) from which there otherwise is a storm water discharge from a construction activity provided:

a. the support activity is directly related to a construction site that is required to have LPDES permit coverage for discharges of storm water associated with construction activity;

b. the support activity is not a commercial operation serving multiple unrelated construction projects by different operators, and does not operate beyond the completion of the construction activity at the last construction project it supports;

c. appropriate controls and measures are identified in the storm water pollution prevention plan for the discharges from the support activity areas;

d. pollutant discharges from the support activity areas (including stormwater discharges from dedicated asphalt plants and dedicated concrete plants) are minimized to the maximum extent practicable; and

e. for cement/concrete or asphalt batch plants, that are not already covered by another LPDES permit, the following conditions are met.

PROCESS WASTEWATER AND PROCESS AREA STORM WATER FROM CEMENT AND CONCRETE FACILITIES

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS*	
	MONTHLY AVERAGE	DAILY MAXIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE
FLOW (gpd)	Report	Report	1/month	estimate
TSS	------	50 mg/L	1/month	grab
Oil & Grease	------	15 mg/L	1/month	grab
pH -Allowable Range (Standard Units)	6.0 (Minimum)	9.0 (Maximum)	1/month	grab

PROCESS AREA STORM WATER DISCHARGE FROM HOT MIX ASPHALT/ASPHALTIC CONCRETE FACILITIES WITH NO DISCHARGE OF PROCESS WASTEWATER[1,2]

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS*	
	MONTHLY AVERAGE	DAILY MAXIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE
FLOW (gpd)	Report	Report	1/month	estimate
TSS	-----	45 mg/l	1/month	grab
TOC	-----	50 mg/l	1/month	grab
Oil & Grease	-----	15 mg/l	1/month	grab
pH - Allowable Range (Standard Units)	6.0 (Minimum)	9.0 (Maximum)	1/month	grab

1 Hot Mix/Asphalt Concrete Plants shall have no discharge of process wastewater.

2 The effluent limitations in this outfall are not applicable if the facility implements an effective pollution prevention plan for capturing and retaining the asphalt releaser used to keep working parts moving. Asphalt releasers used for this purpose must be captured by a drip pan, absorbent material, or other appropriate means and removed from the process area for proper disposal on a daily basis so as to prevent the asphalt releaser from coming in contact with storm water. Facilities using these methods will be assigned the effluent section for storm water from stockpiles of washed sand and gravel in lieu of this effluent section for process area storm water discharges.

STORM WATER AND AGGREGATE SPRAY FROM SAND & GRAVEL UNLOADING AREAS AND STOCKPILES OF WASHED SAND & GRAVEL[1,2]

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS*	
	MONTHLY AVERAGE	DAILY MAXIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE
FLOW (gpd)	Report	Report	1/month	estimate

[1] TSS: Daily Maximum Concentration of 100 mg/L will be used as a benchmark level (not a limitation) for pollution prevention practices to be either initiated or modified by the facility. The discharge from this permitted outfall shall not exceed a Daily Maximum of 50 mg/L TOC, 15 mg/L Oil and Grease, or have a pH less than 6.0 or greater than 9.0 standard units. Sampling and analysis on a regular basis is not required. In accordance with Part IV. D.4, an annual visual inspection and report are required.

[2] This outfall includes the discharge of storm water from the unloading hopper and scales used for rail and truck transport of sand and gravel materials where the materials are transported by conveyor to the material storage area and the discharge of potable water used to wet down aggregate storage piles. Wastewater from these activities that percolates into the ground or is evaporated so that wastewater does not leave the facility or enter a receiving stream does not constitute a discharge.

NONPROCESS AREA STORM WATER FROM CEMENT, CONCRETE, AND ASPHALT FACILITIES[1]

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS*	
	MONTHLY AVERAGE	DAILY MAXIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE
FLOW (gpd)	Report	Report	1/month	estimate

[1] The discharge from this permitted outfall shall not exceed a Daily Maximum of 50 mg/L TOC, 15 mg/L Oil and Grease, or have a pH less than 6.0 or greater than 9.0 standard units. Sampling and analysis on a regular basis is not required. In accordance with Part IV.D.4, an annual visual inspection and report are required.

There shall be no discharge of floating solids or visible foam in other than trace amounts, or of free oil or other oily materials, or of toxic materials in quantities such as to cause acute toxicity to aquatic organisms. Furthermore, there shall be no visible sheen or stains attributable to this discharge. There shall be no accumulation of solids in the receiving stream which has the potential to negatively impact aquatic life or hinder natural drainage. The use of dilution or flow augmentation (LAC 33:IX.3705.F) to achieve effluent concentration limitations is prohibited.

*For monitoring and reporting procedures and requirements for the cement/concrete/asphalt plant discharges limited above, see Part VI.W.

3. Limitations on Coverage. The following storm water discharges from construction sites are not authorized by this permit.

a. Post Construction Discharges**.** Storm water discharges that originate from the site after construction activities have been completed, and the site, including any temporary support activity at the site, has undergone final stabilization. Industrial post-construction storm water discharges may need to be covered by a separate LPDES permit.

b. Discharges Mixed with Non-storm Water. Discharges that are mixed with sources of non-storm water other than:

1) discharges which are identified in Parts I.A.2 above (including concrete or asphalt batch plants, equipment staging yards, material storage areas), and

2) non-storm water discharges listed in Part III.A.3 which are authorized under this system, and

3) discharges of material other than storm water that are in compliance with another LPDES permit issued for that discharge, and which are addressed in the storm water pollution prevention plan in such a manner as to identify and ensure the implementation of appropriate pollution prevention measures for the non-storm water component(s) of the discharge, as required below in Part IV.D.5. Any discharge authorized by a different LPDES permit may be commingled with discharges authorized by this permit.

c. Discharges Covered by Another Permit. Storm water discharges associated with construction activity that have been issued an individual permit or required to obtain coverage under an alternative general permit in accordance with Part VI.L. As provided in Part I.A.1 above, any permittee covered by an individual permit may request that the individual permit be terminated if the permitted source or activity is also eligible for coverage under this general permit. Upon written approval of that request by this Office, the individual permit will be terminated and the permittee will be covered by this general permit.

d. Discharges Threatening Water Quality**.** Storm water discharges from construction sites that LDEQ determines will cause, or have the reasonable potential to cause or contribute to, violations of water quality standards. (Where such determinations have been made, the discharger will be notified by LDEQ that an individual permit application is necessary.) However, LDEQ may authorize coverage under this permit after appropriate controls and implementation procedures designed to bring the discharges into compliance with water quality standards have been included in the storm water pollution prevention plan.

e. Discharges That Are Not Protective of Endangered and Threatened Species**.**

(1) A discharge of storm water associated with construction activity is covered under this permit only if the applicant certifies that it meets at least one of the following criteria. The

applicant must use the process in Addendum A (Endangered Species Guidance) to determine eligibility **PRIOR** to submittal of the Notice of Intent (NOI). Failure to continue to meet one or more of these criteria ((a)-(d)) during the entire term of the permit will result in the storm water discharges associated with construction activity being ineligible for coverage under this permit.

(a) The storm water discharge(s), and the construction and implementation of Best Management Practices (BMPs) to control storm water runoff, are not likely to adversely affect species identified in Addendum A of this permit or critical habitat for a listed species; or

(b) The applicant's activity has received previous authorization under Section 7 or Section 10 of the Endangered Species Act (ESA) and that authorization addressed storm water discharges and/or BMPs to control storm water runoff (e.g., developer included impact of entire project in consultation over a wetlands dredge and fill permit under Section 7 of the Endangered Species Act); or

(c) The applicant's activity was considered as part of a larger, more comprehensive assessment of impacts on endangered and threatened species under Section 7 or Section 10 of the Endangered Species Act which accounts for storm water discharges and BMPs to control storm water runoff (e.g., where an area-wide habitat conservation plan and Section 10 permit is issued which addresses impacts from construction activities including those from storm water, or a National Environmental Policy Act (NEPA) review is conducted which incorporates ESA Section 7 procedures); or

(d) The operator's activity was considered as part of a larger, more comprehensive site-specific assessment of impacts on endangered and threatened species by the owner or other operator of the site and that permittee certified eligibility under item (a), (b), or (c) above (e.g., owner was able to certify no adverse impacts for the project as a whole under item (a)), so the contractor can then certify under item (d). Utility companies applying for permit coverage for the entire permit area of coverage may certify under item (d) since authorization to discharge is contingent on a principal operator of a construction project having been granted coverage under this, or an alternative LPDES permit for the areas of the site where utilities installation activities will occur.

(2) All applicants must follow the procedures provided in Addendum A of this permit when determining eligibility to operate under the permit.

(3) The applicant must comply with any terms and conditions imposed under the eligibility requirements of paragraphs (1)(a), (b), (c), or (d) above to ensure that storm water discharges or BMPs to control storm water runoff are protective of listed endangered and threatened species and/or critical habitat. Such terms and conditions must be incorporated in the applicant's storm water pollution prevention plan.

(4) This permit does not authorize any "take" (as defined under Section 9 of the Endangered Species Act) of endangered or threatened species unless such take is authorized under Section 7 or 10 the Endangered Species Act.

(5) This permit does not authorize any storm water discharges or require any BMPs to control storm water runoff that are likely to jeopardize the continued existence of any species that are listed as endangered or threatened under the Endangered Species Act or result in the adverse modification or destruction of habitat that is designated as critical under the Endangered Species Act.

f. Discharges Adversely Affecting Properties Eligible for Protection Under the National Historic Preservation Act. Eligibility for coverage under this permit is contingent upon compliance with the National Historic Preservation Act (NHPA). Discharges are authorized under this permit only if:

(1) the facility's storm water discharges, allowable non-storm water discharges, and discharge-related activities do not affect a property that is listed or is eligible for listing on the National Register of Historic Places as maintained by the Secretary of the Interior; or

(2) if historical properties are identified and it is determined there is the potential to adversely affect the property, the facility has obtained and is in compliance with a written agreement with the Louisiana State Historic Preservation Officer (SHPO) that outlines all measures to be undertaken to mitigate or prevent adverse effect(s) to the historic property.

Addendum D of this permit provides guidance and references to assist operators with determining permit eligibility concerning this provision.

g. Discharges Not in Compliance with State Water Quality Standards/TMDL Requirements

Covered dischargers shall not cause or contribute to a violation of a state water quality standard. New or proposed dischargers must evaluate eligibility by determining compliance with this provision prior to assuming authorization by the permit.

The discharge of any pollutant into any water for which a Total Maximum Daily Load (TMDL) has been either established or approved by LDEQ is not authorized unless the discharge is consistent with that TMDL. During determination of eligibility for coverage under the permit, **new dischargers** (see LAC 33:IX.2313) to a 303(d) waterbody must determine that their proposed discharges will be in compliance with LAC 33:IX.2317.A.9. In essence, a new discharger is one initiated after August 13, 1979, and not previously permitted. Any discharger (**both existing and new**) to a waterbody for which there is an approved TMDL must confirm that the TMDL allocated a portion of the load for storm water point source discharges if the proposed discharges will contain the pollutant(s) for which the waterbody is impaired or the TMDL developed. Such discharges are expected to be rare for the wastewater types covered by the reissuance permit because the required control/prevention measures are designed to prevent the release of these pollutants in storm water.

In a situation where an LDEQ-approved or established TMDL has specified a general wasteload allocation applicable to construction storm water discharges, but no specific requirements for construction sites have been identified in the TMDL, the operator should consult with LDEQ to confirm that adherence to a SWPPP that meets the requirements of this permit will be consistent with the approved TMDL. The SWPPP must clearly state which BMPs were selected for the site and describe how the design and implementation of the selected BMPs are expected to ensure that storm water discharges from the construction site are in compliance with the established TMDL. If the LDEQ-approved or established TMDL specifically precludes such discharges, the operator is not eligible for coverage under this permit.

Where an LDEQ-approved or established TMDL has not specified a wasteload allocation applicable to construction storm water discharges, but has not specifically excluded these discharges, adherence to a SWPPP that meets the requirements of this permit will be considered to be consistent with the approved TMDL. Current TMDL reports are located on the Internet at http://www.deq.louisiana.gov/portal/default.aspx?tabid=1563#Reports and at http://www.epa.gov/region6/water/npdes/tmdl/2008/louisiana/final/index.htm.

Broadly stated, new or existing discharges of a particular pollutant are prohibited where there is a TMDL unless the discharge meets the requirements established in the TMDL. If a discharge is not/will not meet these requirements, the operator must seek coverage under an alternative permit. Where a discharger is already operating under the permit and is later discovered to cause or have the reasonable potential to cause or contribute to the violation of a state water quality standard, the permitting authority will notify the operator of such violation(s) and the permittee shall take all necessary actions to ensure that future discharges do not cause or contribute to the violation of a water quality standard and document these actions in the pollution prevention plan. If violations remain or recur, then coverage under the permit is automatically terminated and alternate coverage must be obtained. Compliance with this requirement does not preclude any enforcement activity as provided by the Louisiana Environmental Quality Act (La. R.S. 30:2001, et seq.) for the underlying violation.

The list of impaired waterbodies (sometimes referred to as 303(d) waterbodies) may be accessed on the LDEQ Internet site at www.deq.louisiana.gov/portal/. Go through the following links to view the list: INFO FOR Citizens – Surface and Ground Water Quality Assessment – Quick Link to Water Quality Assessments in Louisiana – Water Quality Assessments – 2006. Contact the Water Permits Division at (225) 219-3181 if you have trouble locating or accessing the list.

4. Exclusions.

This general permit **shall not** apply to:

a. Storm water discharges associated with industrial activity that originate from the site after construction activities have been completed and the site has undergone final stabilization as defined in Part IX.

b. Non-storm water discharges (except certain non-storm water discharges specifically listed in this general permit). However, this permit can authorize storm water discharges from construction where the discharges are mixed with non-storm water discharges that are authorized by a different LPDES permit.

c. Storm water discharges from construction activities that are covered by an existing LPDES permit. However, any permittee covered by another permit may request that the other permit be terminated if the permitted source or activity is also eligible for coverage under this general permit. Upon written approval of that request by this Office, the permittee will be covered by this general permit, and the other permit terminated.

d. Storm water discharges from construction activities that LDEQ has determined to be or may reasonably be expected to be causing or contributing to a violation of a water quality standard.

e. Storm water discharges from construction activities and storm water discharge-related activities, if the discharges are likely to adversely affect a listed endangered or threatened species or its critical habitat (unless in compliance with specific Endangered Species Act (ESA) related conditions in the permit).

f. Storm water discharges from construction activities and storm water discharge-related activities, if the discharges are not in compliance with the National Historic Preservation Act (NHPA).

B. <u>Obtaining Authorization</u>.

1. In order for storm water discharges from construction activities to be authorized to discharge under this general permit, a discharger must:

a. meet the Part IA applicability requirements.

b. develop a storm water pollution prevention plan (SWPPP) covering either the entire site or all portions of the site for which they are operators (see definition in Part IX) according to the requirements in Part IV (preparation and implementation of the Plan may be a cooperative effort where there is more than one operator at a site), and then

c. submit a <u>complete</u> and <u>accurate</u> Notice of Intent (NOI) in accordance with the requirements of Part II, using an NOI form provided by the State Administrative Authority (or a photocopy thereof). **Only <u>one</u> NOI needs to be submitted to cover all of the permittee's activities on the common plan of development or sale (e.g., you do not need to submit a separate NOI for each separate lot in a residential**

subdivision or for two separate buildings being constructed at a manufacturing facility, provided your SWPPP covers each area for which you are an operator.) The storm water pollution prevention plan must be implemented upon commencement of construction activities.

Application for coverage shall be made by:

(1) a party having operational control over construction plans and specifications; and/or

(2) a party having day-to-day operational control over those activities at a project site which are necessary to ensure compliance with the SWPPP or other permit conditions.

When operational control over plans and specifications, and control over the day-to-day activities described above, are held by separate parties, both shall submit an NOI. In cases with only one control party, that party alone is required to submit the NOI.

The entities who are considered operators will commonly consist of the owner or developer of a project (the party with control of project specifications) and the general contractor (the party with day to day operational control of the activities at the project site which are necessary to ensure compliance with the permit).

For subdivisions and commercial developments, an NOI shall be submitted by the owner/developer, the general contractor, and each individual builder within the subdivision or commercial development.

Any entity with operational control over only a portion of a larger project (e.g., one of four homebuilders in a subdivision), must submit its own NOI and obtain its own permit authorization number. They may share a SWPPP with other permittees operating in the area of the larger project; however, each permittee is responsible for compliance with all conditions of this permit as it relates to their activities on their portion of the construction site. Each permittee shall ensure either directly or through coordination with other permittees, that their activities do not render another party's pollutant discharge controls ineffective. Any entity with operational control over only a portion of a larger project shall either implement their portion of a common SWPPP or develop and implement their own site specific SWPPP.

For more effective coordination of BMPs and opportunities for cost sharing, a cooperative effort by the different operators at a site to prepare and participate in a comprehensive SWPPP is encouraged. Individual operators at a site may, but are not required to develop separate SWPPPs that cover only their portion of the project provided reference is made to other operators at the site.

In instances where there is more than one SWPPP for a site, cooperation between the permittees is encouraged to ensure storm water discharge control measures are consistent with one another (e.g., provisions to protect listed species and critical habitat).

All permitted entities are responsible for compliance with all applicable conditions of this permit as it relates to your activities on your portion of the construction site, including protection of endangered species, critical habitat, and historic properties, and implementation of control measures described in the SWPPP.

Contractors and subcontractors who are under the general supervision of the general contractor are not considered operators and would not need to submit NOIs. The general contractor shall be responsible for submitting the NOI, implementing the SWPPP, and ensuring that contractors and subcontractors actions/activities do not render the general contractor's pollutant discharge controls ineffective.

2. For construction sites where the operator changes, or where a new operator is added after the submittal of an NOI under Part II, a new NOI must be submitited in accordance with Part II.

3. Unless notified by LDEQ to the contrary, all dischargers who submit a complete and accurate NOI in accordance with the requirements of this permit are authorized to discharge storm water from construction activities under the terms and conditions of the permit upon the receipt of a hand-delivered NOI by the Office of Environmental Services, Water Permits Division or 48 hours after the postmark date on the envelope that contains the complete and accurate NOI.

Operators who submit NOIs with errors will be notified and are not authorized to discharge storm water from construction activities until the errors or deficiencies have been corrected and the corrected NOI has been delivered to LDEQ.

If warranted, LDEQ may deny coverage under this general permit and require submittal of an application for an individual LPDES permit (see Part VI.L of this permit).

An annual maintenance fee will be assessed for coverage under the permit.

A printed hard copy of this permit may be obtained by contacting LDEQ's Water Permits Division at (225) 219-3181, or a copy can be downloaded from the LDEQ website at www.deq.louisiana.gov/portal. Go through the following links to find the permit: INFO ABOUT Water – Permits – LPDES Permits, Information, and Applications – LPDES General Permits – LAR100000. A printed hard copy of the Notice of Intent (NOI) to be covered under the permit can be downloaded from the LDEQ website at www.deq.louisiana.gov/portal/. Go through the following links to find the NOI form: INFO ABOUT Water – Permits – LPDES Permits, Information, and Applications – LPDES Forms – LPDES Permit Application Forms – Stormwater Permit Notices of Intent – CSW-G.

C. Terminating Coverage.

1. Permittees wishing to terminate coverage under this permit must submit a Notice of Termination (NOT) in accordance with Part VIII of this permit. Compliance with this permit is required until an NOT is submitted. The permittee's authorization to discharge under this permit terminates at midnight of the day the NOT is postmarked.

2. All permittees must submit an NOT within thirty (30) days after one or more of the following conditions have been met.

a. final stabilization (see definition Part IX) has been achieved on all portions of the site for which the permittee is responsible (including if applicable, returning agricultural land to its pre-construction agricultural use);

b. another operator/permittee has assumed control according to Part VI.G.2.d over all areas of the site that have not been finally stabilized;

c. coverage under an individual or alternative general LPDES permit has been obtained; or

d. for residential construction only, temporary stabilization has been completed and the residence has been transferred to the homeowner.

Enforcement actions may be taken if a permittee submits an NOT without meeting one or more of these conditions.

[**NOTE:** Annual permit fees continue to be assessed for all permit authorizations which remain active. Permittees who meet any of the conditions of item 2 above and who fail to submit a completed NOT form to the Water Permits Division will continue to receive invoices for annual permit fees. If you meet any of the conditions of item 2 above you must submit a completed NOT form to the Water Permits Division to terminate permit coverage; otherwise, you will continue receiving invoices from LDEQ for annual permit fees.]

Part II. NOTICE OF INTENT REQUIREMENTS

A. Deadlines for Notification.

1. Except as provided below in Parts II.A.3 and II.A.4, for parties required to obtain permit authorization, defined above in Part I.B.1, an initial complete and accurate Notice of Intent (NOI) in accordance with the requirements of this Part must be received by this Office prior to the commencement of construction activities (i.e., the initial disturbance of soils associated with clearing, grading, excavation activities, or other construction activities);

2. Except as provided in Parts II.A.3 and II.A.4, for parties defined as operators solely due to their day-to-day operational control over those activities at a project site which are necessary to ensure compliance with the SWPPP or other permit conditions (e.g., general contractor, erosion control contractor, etc.), a complete and accurate NOI must be received by this Office prior to commencing work at the site.

3. For storm water discharges from construction sites where the operator changes, (including projects where an operator is added after an NOI has been submitted under Parts II.A.1 or II.A.2), a complete and accurate NOI in accordance with the requirements of this Part must be received by this Office from the new operator prior to when the new operator assumes operational control over site specifications or commences work at the site.

4. Dischargers are not prohibited from submitting late NOIs. When a late NOI is submitted, authorization is only for discharges that occur after permit coverage is granted. The Agency reserves the right to bring appropriate enforcement actions for any unpermitted activities that may have occurred between the time construction commenced and authorization of future discharges is granted.

5. This permit replaces the LPDES General Permit for Storm Water Discharges From Construction Activities, issued July 30, 2004. In accordance with the provision of LAC 33:IX.2515.B.2.f., those permittees currently authorized under that permit are not required to submit a new NOI. Provided the applicability requirements of the reissued permit are met, these permitted dischargers will automatically be covered under the reissued LPDES permit; notification of coverage and a copy of the permit will be sent to each permittee after permit finalization. Three (3) days after the postmark date of the notification of the permittee's coverage under the reissued permit each automatically reauthorized permittee must take the following actions unless they request and obtain an individual permit:

a. for the first 30 days after the effective date of the permit, comply with the terms and conditions of the 2004 construction general permit; and

b. no later than 30 days after the postmark date of the notification of the reissued permit, take the necessary actions to comply with all conditions of the reissued permit including updating the SWPPP to incorporate any new/changed requirements in Part IV of the reissued permit.

6. Operators of ongoing construction projects not currently authorized to discharge under the previous construction general permit issued in 2004 must:

a. prior to submittal of an NOI, prepare and comply with a storm water pollution prevention plan in accordance with the requirements in this general permit; and

b. Immediately submit an NOI according to Part II.A and B.

B. **Contents of Notice of Intent.**

Notice of Intent for Construction Projects. The Notice(s) of Intent shall be signed in accordance with Part VI.G of this permit and shall include at a minimum:

1. the name, address, and telephone number of the construction site owner or operator filing the NOI for permit coverage and operator status as a Federal, State, Tribal, private, or other public entity;

2. the name (or other identifier), street address (description of location if no street address is available), city, parish, and the latitude and longitude of the approximate center of the construction site/project for which the notification is submitted;

3. whether or not the construction project is located on Indian Lands;

4. a certification that a storm water pollution prevention plan, including both construction and post-construction controls, has been developed, and that the SWPPP is compliant with any applicable State and/or local sediment and erosion plans. (A copy of the plans or permits should not be included with the NOI submission);

5. the location where the SWPPP may be viewed and the name and telephone number of a contact person for scheduling viewing times;

6. an estimate of project start date and completion dates, estimates of the number of acres of the site on which soil will be disturbed, and the type of facility being constructed;

7. the name of the receiving water(s);

8. based on Appendix C, whether the storm water runoff from the site will flow directly into a waterbody listed as an Outstanding Natural Resource Water (ONRW); (if the discharge will ultimately enter a Scenic Stream, the applicant is instructed to contact the Louisiana Department of Wildlife and Fisheries (LDWF) at 318-343-4044);

9. based on the instructions in Addendum A, whether any listed or proposed threatened or endangered species, or designated critical habitat, are in proximity to the storm water discharges covered by this permit;

10. based on the instructions in Addendum D, whether any properties listed or eligible for listing on the National Register of Historic Places under the National Historic Preservation Act are located on the construction site and whether the State Historic Preservation Office was involved in your determination of eligibility;

11. the permit number of any LPDES permit(s) for any discharge(s) (including any storm water discharges or any non-storm water discharges) from the site, to the extent available.

C. Where to Submit.

NOIs signed in accordance with Part VI.G of this permit, are to be submitted to the State Administrative Authority at the following address:

Louisiana Department of Environmental Quality
Office of Environmental Services
P. O. Box 4313
Baton Rouge, LA 70821-4313
Attn: Water Permits Division

Current mailing addresses for the different Department offices are posted on the LDEQ web page at www.deq.louisiana.gov/portal/. Mailing addresses for the different Department offices are posted on the LDEQ web page at http://www.deq.louisiana.gov/portal/. Go through the following links to find the current mailing addresses: ABOUT – Contact Information – Scroll down to **Mailing Addresses**.

Part III. SPECIAL CONDITIONS, MANAGEMENT PRACTICES, AND OTHER NON-NUMERIC LIMITATIONS

A. Prohibition on Non-Storm Water Discharges.

1. Except as provided in Part I.A.2 and in items 2 and 3 below, all discharges covered by this permit shall be composed entirely of storm water associated with construction activity.

2. Discharges of material other than storm water that are in compliance with an LPDES permit (other than this permit) issued for that discharge may be mixed with discharges authorized by this permit.

3. The following non-storm water discharges are authorized by this permit provided the non-storm water component of the discharge is in compliance with Part IV.D.5 (Non-storm Water Discharges):

- **a.** discharges from fire fighting activities;
- **b.** fire hydrant flushings;
- **c.** waters used to wash vehicles where detergents are not used;
- **d.** waters used to control dust in accordance with Part IV.D.2.c.(2);
- **e.** potable water sources including waterline flushings;
- **f.** routine external building washdown which does not use detergents;
- **g.** diverted stream flows;
- **h.** pavement washwaters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material has been removed) and where detergents are not used;
- **i.** uncontaminated air conditioning or compressor condensate;
- **j.** uncontaminated ground water infiltration (as defined at 40 CFR 3.2005(20));
- **k.** uncontaminated pumped ground water or spring water;
- **l.** foundation or footing drains where flows are not contaminated with process materials such as solvents;
- **m.** uncontaminated excavation dewatering; and
- **n.** landscape irrigation.

B. Requirements for Notification. The discharge of hazardous substances or oil in the storm water discharge(s) from a facility shall be prevented or minimized in accordance with the applicable storm water pollution prevention plan for the facility. This permit does not relieve the permittee of the reporting requirements of LAC 33:I.3915 and LAC 33:I.3917.

1. Emergency Notification - The permittee shall report any noncompliance which may endanger human health or the environment. As required by LAC 33:I.3915, in the event of an unauthorized discharge that does cause an emergency condition, the discharger shall notify the hotline (DPS 24-hour Louisiana Emergency Hazardous Materials Hotline) by telephone at (225) 925-6595 (collect calls accepted 24 hours a day) immediately (reasonable period of time after taking prompt measures to determine the nature, quantity, and potential off-site impact of a release, considering the exigency

of the circumstances), but in no case later than one hour after learning of the discharge. (An emergency condition is any condition which could reasonably be expected to endanger the health, safety of the public, cause significant adverse impact to the land, water, or air environment, or cause severe damage to property.) Notification required by this section will be made regardless of the amount of discharge. A written submission shall be provided within 7 calendar days after the telephone notification. The report shall contain the following information:

a. the name, address, telephone number, Agency Interest (AI) number (number assigned by the department) if applicable, and any other applicable identification numbers of the person, company, or other party who is filing the written report, and specific identification that the report is the written follow-up report required by the permit;

b. the time and date of verbal notification, the state official contacted when reporting, the name of person making that notification, and identification of the site or facility, vessel, transport vehicle, or storage area from which the unauthorized discharge occurred;

c. date(s), time(s), and duration of the unauthorized discharge and, if not corrected, the anticipated time it is expected to continue;

d. details of the circumstances (unauthorized discharge description and root cause) and events leading to any unauthorized discharge, including incidents of loss of sources of radiation, and if the release point is subject to a permit:
(i) the current permitted limit for the pollutant(s) released; and
(ii) the permitted release point/outfall ID;

e. the common or scientific chemical name of each specific pollutant that was released as the result of an unauthorized discharge, including the CAS number and U.S. Department of Transportation hazard classification, and the best estimate of amounts of any and all released pollutants (total amount of each compound expressed in pounds, including calculations);

f. a statement of the actual or probable fate or disposition of the pollutant or source of radiation and what off-site impact resulted;

g. remedial actions taken, or to be taken, to stop unauthorized discharges or to recover pollutants or sources of radiation;

h. the steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

i. Written notification reports shall be submitted to the Office of Environmental Compliance, Surveillance Division SPOC by mail or fax. The transmittal envelope and report or fax cover page and report should be clearly marked "UNAUTHORIZED DISCHARGE NOTIFICATION REPORT."

2. Prompt Notification – As required by LAC 33:I.3917, in the event of an unauthorized discharge that exceeds a reportable quantity specified in LAC 33:I.Subchapter E, but does not cause an emergency condition, the discharger shall promptly notify the department within 24 hours after learning of the discharge. Notification should be made to the Office of Environmental Compliance, Surveillance Division Single Point of Contact (SPOC) in accordance with LAC 33:I.3923.

In accordance with LAC 33:I.3923, prompt notification shall be provided within a time frame not to exceed 24 hours and shall be given to the Office of Environmental Compliance, Surveillance Division Single Point of Contact (SPOC) as follows:

a. by the Online Incident Reporting screens found at http://www3.deq.louisiana.gov/surveillance/irf/forms/ ; or
b. by email utilizing the Incident Report Form and instructions found at http://www.deq.louisiana.gov/portal/Default.aspx?tabid=279, or
c. by telephone at (225) 219-3640 during office hours, or (225) 342-1234 after hours and on weekends and holidays.

3. The SWPPP required under Part IV (Storm Water Pollution Prevention Plans) of this permit must be modified within 14 calendar days of knowledge of the release to: provide a description of the release, the circumstances leading to the release, and the date of the release. In addition, the plan must be reviewed to identify measures to prevent the recurrence of such releases and to respond to such releases, and the plan must be modified where appropriate.

C. **Spills.** This permit does not authorize the discharge of hazardous substances or oil resulting from an on-site spill.

D. **Discharge Compliance with Water Quality Standards.**

1. You must select, install, implement and maintain control measures at your construction stie that minimize pollutants in the discharge as necessary to meet applicable water quality standards. In general, except in situations explained below, your storm water controls developed, implemented, and updated consistent with the other provisions of Part III are considered as stringent as necessary to ensure that your discharges do not cause or contribute to an excursion above any applicable water quality standard.

2. Dischargers covered under this permit shall not cause or have the reasonable potential to cause or contribute to a violation of a water quality standard. At any time after authorization, LDEQ may determine that your storm water discharges may cause, have reasonable potential to cause, or contribute to an excursion above any applicable water quality standard. If such a determination is made, LDEQ will require you to:

i. Modify your storm water controls in accordance with Part IV.C to address adequately the identified water quality concerns;
ii. Submit valid and verifiable data and information that are representative of ambient conditions and indicate that the receiving water is attaining water quality standards; or
iii. Cease discharge of pollutants from construction activity and submit an individual application according to Part VI.L .

3. All written responses required under this part must include a signed certification consistent with Part VI.G.2.

4. If violations remain or recur, then coverage under this permit may be terminated by the permitting authority and an alternative permit may be issued. Compliance with this requirement does not preclude any enforcement activity as provided by the Clean Water Act and Environmental Quality Act for the underlying violation.

E. <u>Responsibilities of Operators</u>.

Permittees may meet one or both of the operational control components in the definition of "operator" found in Part IX (Definitions). Either Part III.E.1 or Part III.E.2 or both will apply depending on the type of operational control exerted by an individual permittee. Part III.E.3 applies to all permittees.

1. Permittee(s) with operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications (e.g., developer or owner) must:

a. ensure the project specifications that they develop meet the minimum requirements of Part IV (Storm Water Pollution Prevention Plans) and all other applicable conditions;

b. ensure that the SWPPP indicates the areas of the project where they have operational control over project specifications (including the ability to make modifications in the specifications), and ensure all other permittees implementing portions of the SWPPP impacted by any changes they make to the plan are notified of such modifications in a timely manner; and

c. ensure that the SWPPP for portions of the project for which they are operators indicates the name and LPDES permit number for parties with day-to-day operational control of those activities necessary to ensure compliance with the SWPPP or other permit conditions. If these parties have not been identified at the time the SWPPP is initially developed, the permittee with operational control over project specifications shall be considered to be the responsible party until such time as the authority is transferred to another party (e.g., general contractor) and the plan updated.

2. Permittee(s) with day-to-day operational control of those activities at a project which are necessary to ensure compliance with the SWPPP for the site or other permit conditions (e.g., general contractor) must:

a. ensure the SWPPP for portions of the project for which they are operators meets the minimum requirements of Part IV (Storm Water Pollution Prevention Plans) and identifies the parties responsible for implementation of control measures identified in the plan;

b. ensure that the SWPPP indicates areas of the project where they have operational control over day-to-day activities; and

c. ensure that the SWPPP for portions of the project for which they are operators indicates the name and LPDES permit number of the party(ies) with operational control over project specifications (including the ability to make modifications in the specifications).

3. Permittees with operational control over only a portion of a larger construction site (e.g., one of four homebuilders in a subdivision) are responsible for compliance with all applicable terms and conditions of this permit as it relates to their activities on their portion of the construction site, including protection of endangered species and implementation of BMPs and other controls required by the SWPPP. Permittees shall ensure either directly or through coordination with other permittees that their activities do not render another party's pollution controls ineffective. Permittees must either implement their portions of a common SWPPP or develop and implement their own SWPPP.

Part IV. STORM WATER POLLUTION PREVENTION PLANS

At least one storm water pollution prevention plan (SWPPP) shall be developed for each construction project or site covered by this permit. For more effective coordination of BMPs and opportunities for cost sharing, a cooperative effort by the different operators at a site to prepare and participate in a comprehensive SWPPP is encouraged. Individual operators at a site may, but are not required to, develop separate SWPPPs that cover only their portion of the project provided that reference is made to other operators at the site. In instances where there is more than one SWPPP for a site, coordination must be conducted between the permittees to ensure the storm water discharge controls and other measures are consistent with one another (e.g., provisions to protect listed species and critical habitat).

Storm water pollution prevention plans shall be prepared in accordance with good engineering practices. The SWPPP shall identify potential sources of pollution which may reasonably be expected to affect the quality of storm water discharges from the construction site. The SWPPP shall describe and ensure the implementation of practices which will be used to reduce the pollutants in storm water discharges associated with construction activity at the construction site and to assure compliance with the terms and conditions of this permit. When developing SWPPPs, applicants must follow the procedures in Addendum A of this permit to determine whether listed endangered or threatened species or critical habitat would be affected by the applicant's storm water discharges or storm water discharge-related activities. Any information on whether listed species or critical habitat is found in proximity to the construction site must be included in the SWPPP. Any terms or conditions that are imposed under the eligibility requirements of Part I.A.3.e and Addendum A of this permit to protect listed species or critical habitat from storm water discharges or storm water discharge-related activity must be incorporated into the SWPPP. Permittees must implement the applicable provisions of the SWPPP required under this Part as a condition of this permit.

A. <u>Deadlines for Plan Preparation and Compliance</u>.

The storm water pollution prevention plan shall:

1. Be completed prior to the submittal of an NOI to be covered under this permit (except as provided in Parts II.A.5) and updated as appropriate; and

2. The plan shall provide for compliance with the terms and schedule of the SWPPP beginning with the initiation of construction activities.

B. <u>Signature, Plan Review and Making Plans Available</u>.

1. The SWPPP shall be signed in accordance with Part VI.G (Signatory Requirements), and be retained on-site at the facility which generates the storm water discharge in accordance with Part V (Retention of Records) of this permit.

2. The permittee shall post a notice near the main entrance of the construction site with the following information:

a. the LPDES permit number for the project or a copy of the NOI if a permit authorization number has not yet been assigned;

b. the name and telephone number of a local contact person;

c. a brief description of the project; and

d. the location of the SWPPP if the site is inactive or does not have an on-site location to store the plan.

If posting this information near a main entrance is infeasible due to safety concerns, the notice shall be posted in a local public building. If the construction project is a linear construction project (e.g., pipeline, highway, etc.), the notice must be placed in a publicly accessible location near where construction is actively underway and moved as necessary. This permit does not provide the public with any right to trespass on a construction site for any reason, including inspection of a site, nor does this permit require that permittees allow members of the public access to a construction site.

3. The permittee shall make SWPPPs available upon request to: LDEQ; the local agency approving sediment and erosion plans, grading plans, or storm water management plans; local government officials; or to the operator of a municipal separate storm sewer receiving discharges from the site. The copy of the SWPPP that is required to be kept on-site (or locally available) must be made available to LDEQ (or authorized representative) for review at the time of an on-site inspection. Also, in the interest of public involvement, LDEQ encourages permittees to make their SWPPPs available to the public for viewing during normal business hours.

4. The LDEQ may notify the permittee (co-permittees) at any time that the SWPPP does not meet one or more of the minimum requirements of this Part. Such notification shall identify those provisions of this permit which are not being met by the SWPPP, and identify which provisions of the plan require modifications in order to meet the minimum requirements of this Part. Within 7 calendar days of receipt of such notification from LDEQ, (or as otherwise provided by LDEQ), or authorized representative, the permittee shall make the required changes to the plan and shall submit to LDEQ a written certification that the requested changes have been made. The LDEQ may take appropriate enforcement action for the period of time the permittee was operating under a plan that did not meet the minimum requirements of the permit.

C. **Keeping Plans Current**. The permittee must amend the storm water pollution prevention plan whenever:

1. there is a change in design, construction, operation, or maintenance, which has a significant effect on the discharge of pollutants to the waters of the State and which has not otherwise been addressed in the SWPPP;

2. inspections or investigations by site operators, local, state, or federal officials indicate the storm water pollution prevention plan is proving ineffective in eliminating or significantly minimizing pollutants from sources identified under Part IV.D.2 of this permit, or is otherwise not achieving the general objectives of controlling pollutants in storm water discharges associated with construction activity; and

3. the plan shall be amended to identify any new contractor and/or subcontractor that will implement a measure of the storm water pollution prevention plan (see Part IV.E). The plan must also be amended to address any measures necessary to protect endangered and threatened species or historic properties. Amendments to the plan may be reviewed by LDEQ in the same manner as Part IV.B above.

D. **Contents of Plan.** The storm water pollution prevention plan shall include the following items:

1. **Site Description**. Each SWPPP shall provide a description of potential pollutant sources and other information as indicated below:

a. a description of the nature of the construction activity;

b. a description of the intended sequence of major activities which disturb soils for major portions of the site (e.g., grubbing, excavation, grading, utilities and infrastructure installation, etc);

c. estimates of the total area of the site and the total area of the site that is expected to be disturbed by excavation, grading, or other activities including off-site borrow and fill areas;

d. an estimate of the runoff coefficient of the site for both the pre-construction and post-construction conditions and data describing the soil or the quality of any discharge from the site;

e. a general location map (e.g., portion of a city or county map or other map with enough detail to identify the location of the construction site and waters of the United States within one mile of the site);

f. a site map indicating drainage patterns and approximate slopes anticipated after major grading activities, areas of soil disturbance, an outline of areas which will not be disturbed, the location of major structural and nonstructural controls identified in the SWPPP, locations of off-site material, waste, borrow or equipment storage areas, surface waters (including wetlands), locations where storm water is discharged to a surface water; the location of areas where stabilization practices are expected to occur;

g. location and description of any discharge associated with industrial activity other than construction (including discharges from dedicated cement/concrete and asphalt plants) covered by the permit;

h. the name of the receiving water(s), and areal extent and description of wetland or other special aquatic sites at or near the site which will be disturbed or which will receive discharges from disturbed areas of the project;

i. a copy of the permit requirements (may simply attach a copy of this permit);

j. information on whether listed endangered or threatened species and/or critical habitat are found in proximity to the construction activity and whether such species may be affected by the applicant's storm water discharges or storm water discharge-related activities;

k. documentation supporting the determination of permit eligibility with regard to Permit Part I.A.3.f (National Historic Preservation Act), including:

information on whether storm water discharges or storm water discharge-related activities would have an effect on a property that is listed or eligible for listing on the National Register of Historic Places;

where effects may occur, any written agreements made between the operator and the State Historic Preservation Officer to mitigate those effects;

results of the Addendum C historic places screening determinations; and

a description of measures necessary to avoid or minimize adverse impacts on places listed, or eligible for listing, on the National Register of Historic Places, including any terms or conditions that are imposed under the eligibility requirements of Part I.A.3.f of this permit.

l. documentation supporting the determination of permit eligibility with regard to waters that have an LDEQ-established or approved TMDL, including:

(1) identification of whether your discharge is identified, either specifically or generally, in an LDEQ-established or approved TMDL and any associated allocations, requirements, and assumptions identified for your discharge;

(2) summaries of consultation with the LDEQ authorities on consistency of SWPPP conditions with the approved TMDL; and

(3) measures taken to ensure that the discharge of pollutants for the site is consistent with the assumption and requirements of the LDEQ-established or approved TMDL, including any specific wasteload allocation that has been established that would apply to your discharge.

2. Controls. Each SWPPP shall include a description of appropriate control measures (i.e., BMPs) that will be implemented as part of the construction activity to control pollutants in storm water discharges. The SWPPP must clearly describe for each major activity identified in Part IV.D.1.b: a) appropriate control measures and the general timing (or sequence) during the construction process that the measures will be implemented; and b) which permittee is responsible for implementation (e.g., perimeter controls for one portion of the site will be installed by Contractor A after the clearing and grubbing necessary for installation of the measure, but before the clearing and grubbing for the remaining portions of the site. Perimeter controls will be actively maintained by Contractor B until final stabilization of those portions of the site upward of the perimeter control. Temporary perimeter controls will be removed by Owner after final stabilization).

In a situation where an LDEQ-approved or established TMDL has specified a general wasteload allocation applicable to construction storm water discharges, but no specific requirements for construction sites have been identified in the TMDL, the SWPPP must specifically state which BMPs were selected for the site and describe how the design and implementation of the selected BMPs are expected to ensure that storm water discharges from the construction site are in compliance with the established TMDL.

The description and implementation of control measures shall address the following minimum components:

a. Erosion and Sediment Controls.

(1) Short and Long Term Goals and Criteria:

(a) The construction-phase erosion and sediment controls should be designed to retain sediment on-site to the maximum extent practicable.

(b) All control measures must be properly selected, installed, and maintained in accordance with the manufacturers specifications and good engineering practices. If periodic inspections or other information indicates a control has been used inappropriately, or incorrectly, the permittee must replace or modify the control for site situations.

(c) If sediments escape the construction site, off-site accumulations of sediment must be removed at a frequency sufficient to minimize off-site impacts (e.g., fugitive

sediment in street could be washed into storm sewers by the next rain and/or pose a safety hazard to users of public streets).

(d) Sediment must be removed from sediment traps or sedimentation ponds when design capacity has been reduced by 50%.

(e) Trapped sediment must be removed from a silt fence before the deposit reaches 50 percent of the above-ground fence height (or before it reaches a lower height based on manufacturer's specifications.)

(f) Litter, construction debris, and construction chemicals exposed to storm water shall be prevented from becoming a pollutant source for storm water discharges (e.g., screening outfalls, picked up daily, etc.).

(g) Off-site material storage areas (also including overburden and stockpiles of dirt, borrow areas, etc.) used solely by the permitted project are considered a part of the project and shall be addressed in the storm water pollution prevention plan.

(2) Stabilization Practices. The SWPPP must include a description of interim and permanent stabilization practices for the site, including a site-specific scheduling of the implementation of the practices. Site plans should ensure that existing vegetation is preserved where attainable and that disturbed portions of the site are stabilized. Stabilization practices may include, but are not limited to: establishment of temporary vegetation, establishment of permanent self-sustaining perennial vegetation, mulching, geotextiles, sod stabilization, vegetative buffer strips, protection of trees, preservation of mature vegetation, and other appropriate measures. Use of impervious surfaces for stabilization should be avoided.

In general, you should be aware that final stabilization often takes time (weeks or even months), especially during times of low rainfall or during the colder months of the year. You must continue routine inspections until you have met the final stabilization requirements of the permit. **"Final stabilization" is defined/described in Part IX of the permit.**

The following records shall be maintained and attached to the SWPPP: the dates when major grading activities occur; the dates when construction activities temporarily or permanently cease on a portion of the site; and the dates when stabilization measures are initiated. Except as provided in Parts IV.D.2.(a).(2).(a)-(c) below, stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased.

(a) Where the initiation of stabilization measures by the 14th day after construction activity temporarily or permanently ceases, is precluded by snow cover or frozen ground conditions, stabilization measures shall be initiated as soon as practicable.

(b) Where construction activity on a portion of the site is temporarily ceased, and earth disturbing activities will be resumed within 21 days, temporary stabilization measures do not have to be initiated on that portion of site.

(c) In areas experiencing droughts where the initiation of stabilization measures by the 14th day after construction activity has temporarily or permanently ceased is precluded by seasonal arid conditions, stabilization measures shall be initiated as soon as practicable.

(3) Structural Practices. The SWPPP must include a description of structural practices to divert flows from exposed soils, store flows or otherwise limit runoff and the discharge of pollutants from exposed areas of the site to the degree attainable. Such practices may include but are not limited to: silt fences, earth dikes, drainage swales, sediment traps, check dams, subsurface drains, pipe slope drains, level spreaders, storm drain inlet protection, rock outlet protection, reinforced soil retaining systems, gabions, and temporary or permanent sediment basins. Placement of structural practices in floodplains should be avoided to the degree attainable. The installation of these devices may be subject to Section 404 of the CWA.

(a) For common drainage locations that serve an area with 10 or more acres disturbed at one time, a temporary (or permanent) sediment basin providing storage for a calculated volume of runoff from a 2 year, 24 hour storm from each disturbed acre drained, or equivalent control measures, shall be provided where attainable until final stabilization (see Part IX) of the site. The 3,600 cubic feet of storage area per acre drained does not apply to flows from off-site areas and flows from on-site areas that are either undisturbed or have undergone final stabilization where such flows are diverted around both the disturbed area and the sediment basin.

In determining whether installing a sediment basin is attainable, the permittee may consider factors such as site soils, slope, available area on-site, etc. In any event, the permittee must consider public safety, especially as it relates to children, as a design factor for the sediment basin would preclude a safe design. For drainage locations which serve 10 or more disturbed acres at one time and where a temporary sediment basin or equivalent controls is not attainable, smaller sediment basins and/or sediment traps should be used. Where neither the sediment basin nor equivalent controls are attainable due to site limitations, silt fences, vegetative buffer strips, or equivalent sediment controls are required for all downslope boundaries of the construction area and for those side slope boundaries deemed appropriate as dictated by individual site conditions. LDEQ encourages the use of a combination of sediment and erosion control measures in order to achieve maximum pollutant removal.

(b) For drainage locations serving less than 10 acres, small sediment basins and/or sediment traps should be used. At a minimum, silt fences, vegetative buffer strips, or equivalent sediment controls are required for all downslope boundaries (and those side slope boundaries deemed appropriate as dictated by individual site conditions) of the construction area unless a sediment basin providing storage for a calculated volume of runoff from a 2 year, 24 hour storm or 3,600 cubic feet of storage per acre drained is provided.

b. Storm Water Management. A description of measures that will be installed during the construction process to control pollutants in storm water discharges that will occur after construction operations have been completed must be included in the SWPPP. Structural measures should be placed on upland soils to the degree attainable. The installation of these devices may also require a separate permit under Section 404 of the CWA. Permittees are only responsible for the installation and maintenance of storm water management measures prior to final stabilization of the site, and are not responsible for maintenance after storm water discharges associated with construction activity have been eliminated from the site. You should be aware that final stabilization often takes time (weeks or even months), especially during times of low rainfall or during the colder months of the year. You must continue routine inspections until you have met the final stabilization requirements of the permit (see Part IX). However, post-construction storm water BMPs that discharge pollutants from point sources once construction is completed, may in themselves, need authorization under a separate LPDES permit.

(1) Such practices may include but are not limited to: storm water detention structures (including wet ponds); storm water retention structures; flow attenuation by use of open vegetated swales and natural depressions; infiltration of runoff on-site; and sequential systems (which combine several practices). The storm water pollution prevention plan shall include an explanation of the technical basis used to select the practices to control pollution where flows exceed pre-development levels.

(2) Velocity dissipation devices may be needed at discharge locations and along the length of any outfall channel for the purpose of providing a non-erosive velocity flow from the structure to a water course so that the natural physical and biological characteristics and functions are maintained and protected (e.g., no significant changes in the hydrological regime of the receiving water).

c. Other Controls.

(1) No solid materials, including building materials, shall be discharged to waters of the State, except as authorized by a permit issued under Section 404 of the CWA. "Solid materials" refers to such items as boards, wrapping materials, bricks and concrete debris, and land clearing debris such as leaves and tree limbs, but does not include total suspended solids.

(2) Off-site vehicle tracking of sediments and the generation of dust shall be minimized.

(3) The SWPPP shall ensure and demonstrate compliance with applicable State and/or local waste disposal, sanitary sewer or septic system regulations to the extent these are located within the permitted area.

(4) The SWPPP shall include a narrative description of construction and waste materials expected to be stored on-site, with updates as appropriate. The SWPPP shall also include a description of controls developed to reduce pollutants from these materials including storage practices to minimize exposure of the materials to storm water, and spill prevention and response.

(5) The SWPPP shall include a description of pollutant sources from areas other than construction (including discharges from dedicated cement/concrete and asphalt plants), and a description of controls and measures that will be implemented at those sites to minimize pollutant discharges.

(6) The SWPPP shall include a description of measures necessary to protect listed endangered and threatened species and/or critical habitat including any terms or conditions that are imposed under the eligibility requirements of Part I.A.3.e of this permit. Failure to describe and implement such measures will result in the storm water discharges from the construction activities being ineligible for coverage under this permit.

d. Approved State or Local Plans.

(1) Permittees which discharge storm water associated with construction activities must include in their storm water pollution prevention plan the procedures and requirements which are specified in applicable sediment and erosion site plans or site permits, or storm water management site plans or site permits approved by State or local officials.

(2) Permittees which discharge storm water associated with construction activities must include in their storm water pollution prevention plan any measures that result from agreements from Louisiana State Historic Preservation Officer or tribal historic preservation offices.

(3) Storm water pollution prevention plans must be updated as necessary to reflect any changes which are applicable to protecting surface water resources in the sediment and erosion site plans or site permits, or storm water management site plans or site permits approved by State, or local officials for which the permittee receives written notice.

3. Maintenance. A description of procedures to ensure the timely maintenance of vegetation, erosion and sediment control measures, and other protective measures identified in the site plan are in good and effective operating condition must be provided. Maintenance needs identified in inspections or by other means shall be accomplished before the next anticipated storm event, or as necessary to maintain the continued effectiveness of storm water controls. If maintenance prior to the next anticipated storm event is impracticable, maintenance must be scheduled and accomplished as soon as practicable. Employees and subcontractors as necessary should be made aware of the applicable control measures implemented at the site so that they follow applicable procedures.

4. Inspections. Except for linear or remote projects as discussed below, qualified personnel (provided by the permittee or cooperatively by multiple permittees) shall inspect the construction site in accordance with one of the two schedules listed below. Areas to be inspected include disturbed areas that have not been finally stabilized; areas used for storage of materials that are exposed to precipitation; structural control measures; and locations where vehicles enter or exit the site. You must specify in the SWPPP which schedule you will follow:

- At least once every 7 days, or
- At least once every 14 calendar days, before anticipated storm events (or series of storm events such as intermittent showers over one or more days) and within 24 hours of the end of a storm event of 0.5 inches or greater.

Employees and subcontractors as necessary should be made aware of the applicable control measures implemented at the site so that they follow applicable procedures.

Because linear or remote, unmanned projects often cannot be inspected from stabilized locations without damage to BMPs or re-vegetation efforts, these operators have the option of either 1) conducting regular visual inspections every two weeks, or 2) performing visual inspections within 24 hours following a storm event of 0.5 inches or greater. The option selected by the operator must be identified in the SWPPP and must be adhered to throughout the term of permit coverage.

a. Disturbed areas and areas used for storage of materials that are exposed to precipitation shall be inspected for evidence of, or the potential for, pollutants entering the drainage system. Erosion and sediment control measures identified in the SWPPP shall be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to the receiving waters. Where discharge locations are inaccessible, nearby downstream locations must be inspected to the extent that such inspections are practicable. Locations where vehicles enter or exit the site shall be inspected for evidence of off-site sediment tracking.

b. Based on the results of the inspection, the site description identified in the plan in accordance with Part IV.D.1 of this permit and pollution prevention measures identified in the plan in accordance with Part IV.D.2 of this permit shall be revised as appropriate, but in no case later than seven calendar days following the inspection. Such modifications shall

provide for timely implementation of any changes to the plan within seven calendar days following the inspection.

c. For each inspection required above, you must complete an inspection report. At a minimum, the inspection report must include:

1. The inspection date;
2. Names, titles, and qualifications of personnel making the inspection;
3. Weather information for the period since the last inspection (or since commencement of construction activity if the first inspection) including a best estimate of the beginning of each storm event, duration of each storm event, approximate amount of rainfall for each storm event (in inches), and whether any discharges occurred;
4. Weather information and a description of any discharges occurring at the time of the inspection;
5. Location(s) of discharges of sediment or other pollutants from the site;
6. Location(s) of BMPs that failed to operate as designed or proved inadequate for a particular location;
7. Location(s) of BMPs that need to be maintained;
8. Location(s) where additional BMPs are needed that did not exist at the time of inspection; and
9. Corrective action required including implementation dates.

The inspection report which includes the information listed in items 1-9 above and all actions taken in accordance with Part IV.D.4.b of the permit shall be made and retained as part of the storm water pollution prevention plan for at least three years from the date that the site is finally stabilized. Such reports shall identify any incidents of non-compliance. Where a report does not identify any incidents of non-compliance, the report shall contain a certification that the facility is in compliance with the storm water pollution prevention plan and this permit. The report shall be signed in accordance with Part VI.G of this permit.

5. Non-Storm Water Discharges – Except for flows from fire fighting activities, sources of non-storm water listed in Parts I.A.2 and III.A.2 and 3 of this permit that are combined with storm water discharges associated with construction activity must be identified in the plan. The plan shall identify and ensure the implementation of appropriate pollution prevention measures for the non-storm water component(s) of the discharge.

E. Contractor and Subcontractor Responsibilities.

You must either implement your portion of a common SWPPP or develop and implement your own SWPPP. In instances where there is more than one SWPPP for a site, cooperation between the permittees is encouraged to ensure the storm water discharge control measures are consistent with one another (e.g., provisions to protect listed species and critical habitat). You must ensure either directly or through coordination with other permittees, that your activities do not render another party's pollutant discharge controls ineffective.

1. Contractors and Subcontractors Implementing Storm Water Control Measures. The SWPPP must clearly identify for each control measure included in the plan, the party that will implement the measure. The permittee(s) shall ensure that all contractors and subcontractors are identified in the plan as being responsible for implementing storm water control measures.

2. Contractors and Subcontractors Impacting Storm Water Control Measures. The permittee shall ensure that contractor(s) and subcontractor(s) who will conduct activities which might impact the effectiveness of control measures, but who do not meet the definition of "operator" (Part IX), are identified in the plan and which control measures might be impacted.

3. Utility Companies. The SWPPP must clearly identify, for each control measure identified in the plan relating to the installation of utility service, the party that will implement the measure.

F. Wash Water from Concrete Trucks.

1. Concrete wash water from rinsing the chute. Wash water generated during the rinsing of the chute of a concrete truck at a construction site may be rinsed into a trap on the ground at the construction site. This activity usually generates a de minimis quantity of wash water that can be easily managed at the construction site. The rinsing activity should be done in such a manner that there is no runoff of rinse water from the construction site, especially into surface drainage, storm sewers, or surface waters. Contractors may follow EPA guidance (see http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=browse&Rbutton=detail&bmp=117) for rinsing out the chute of a concrete mixer and hoppers of concrete pumps at a construction site, provided they understand that the wash out structure is temporary and should be cleaned out and removed from the site when the construction project is completed. If a contractor follows the EPA guidance for rinsing out the chute of a concrete mixed and hoppers of concrete pumps at a construction site, he should contact the LDEQ Solid Waste Permits Section to determine if additional environmental protection regulations govern the containment and storage of the wash out material at the construction site.

2. Concrete wash out from the drum. The permit does not authorize the discharge of drum washout water at a construction site. More wash water is generated during the wash out of the drum of a concrete truck than is generated during the rinsing of the chute. The drum of a concrete truck should be washed out at a ready mix concrete plant that is permitted to discharge the wash water.

Part V. RETENTION OF RECORDS

A. Documents. The permittee shall retain copies of storm water pollution prevention plans and all records and reports required by this permit, and records of all data used to complete the Notice of Intent to be covered by this permit, for a period of at least three years from the date that the site is finally stabilized. This period may be extended by request of LDEQ at any time.

B. Accessibility. The permittee shall retain a copy of the storm water pollution prevention plan required by this permit (including a copy of the permit language) at the construction site (or other local site accessible to LDEQ and the public) from the date of project initiation to the date of final stabilization. The permittees with day-to-day operational control over pollution prevention plan implementation shall have a copy of the plan available at a central location on-site for the use of all operators and those identified as having responsibilities under the plan whenever they are on the construction site. A copy of the plan must be readily available to inspectors during normal business hours.

C. Addresses. All written correspondence concerning discharges in Louisiana from any facility covered under this permit, including the submittal of individual permit applications, shall be identified by agency interest number and/or permit number, if one is assigned, and sent to the address below.

Louisiana Department of Environmental Quality
Office of Environmental Services
P. O. Box 4313
Baton Rouge, LA 70821-4313
Attn: Water Permits Division

Part VI. STANDARD PERMIT CONDITIONS

A. Duty to Comply.

1. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Clean Water Act and the Louisiana Environmental Quality Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

2. Penalties for Violations of Permit Conditions.

LA. R.S. 30:2025 provides for civil penalties for violations of these regulations and the Louisiana Environmental Quality Act. LA. R.S. 30:2076.2 provides for criminal penalties for violation of any provisions of the LPDES or any order or any permit condition or limitation issued under said program or implementing any provisions of the LPDES program.

a. Criminal Penalties

(1) Negligent Violations. The Louisiana Revised Statutes LA. R.S. 30:2076.2 provides that any person who negligently violates any provision of the LPDES, or any order issued by the Secretary under the LPDES, or any permit condition or limitation implementing any such provision in a permit issued under the LPDES by the Secretary, or any requirement imposed in a pretreatment program approved under the LPDES, is subject to a fine of not less than $2,500 nor more than $25,000 per day of violation, or by imprisonment for not more than 1 year, or both. If a conviction of a person is for a violation committed after a first conviction of such person, he shall be subject to a fine of not more than $50,000 per day of violation, or imprisonment of not more than two years, or both.

(2) Knowing Violations. The Louisiana Revised Statues LA. R.S. 30:2076.2 provides that any person who knowingly violates any provision of the LPDES, or any permit condition or limitation implementing any such provisions in a permit issued under the LPDES, or any requirement imposed in a pretreatment program approved under the LPDES, is subject to a fine of not less than $5,000 nor more than $50,000 per day of violation, or imprisonment for not more than 3 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person, he shall be subject to a fine of not more than $100,000 per day of violation, or imprisonment of not more than six years, or both.

(3) Knowing Endangerment. The Louisiana Revised Statutes LA. R.S. 30:2076.2 provides that any person who knowingly violates any provision of the LPDES, or any order issued by the Secretary under the LPDES, or any permit condition or limitation implementing any such provisions in a permit issued under the LPDES by the Secretary, and who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury, shall, upon conviction, be subject to a fine of not more than $250,000, or by imprisonment for not more than 15 years, or both. A person which is an organization shall, upon conviction of violating this Part, be subject to a fine of not more than one million dollars. If a conviction of a person is for a violation committed after a first conviction of such person under this Part, the maximum punishment shall be doubled with respect to both fine and imprisonment.

(4) False Statement. The Louisiana Revised Statutes LA. R.S. 30:2076.2 provides that any person who knowingly makes any false material statement, representation, or certification in any application, record, report, plan, or other document filed or required to be maintained under the LPDES or who knowingly falsifies, tampers with, or renders inaccurate, any monitoring device or method required to be maintained under the LPDES, shall upon conviction, be subject to a fine of not more than $10,000 or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person, he shall be subject to a fine of not more than $20,000 per day of violation, or by imprisonment of not more than 4 years, or both.

b. Civil Penalties - The Louisiana Revised Statutes LA R.S. 30:2025 provides that any person found to be in violation of any requirement of this Subtitle may be liable for a civil penalty, to be assessed by the Secretary, an Assistant Secretary, or the court, of not more than the cost to the state of any response action made necessary by such violation which is not voluntarily paid by the violator, and a penalty or not more than $32,500 for each day of violation. However, when any such violation is done intentionally, willfully, or knowingly, or results in a discharge or disposal which causes irreparable or severe damage to the environment, or if the substance discharged is one which endangers human life or health, such person may be liable for an additional penalty of not more than one million dollars.

B. Continuation of the Expired General Permit.

This permit expires five years after the effective date. Should this permit expire before it is reissued, this Office will administratively extend the permit to discharge for permittees that were covered prior to the expiration until such time that a new general permit is issued. Upon reissuance or replacement of this permit, the permittee must comply with the requirements for obtaining coverage under the new permit to maintain authorization to discharge.

C. Need to Halt or Reduce Activity not a Defense.

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

D. **Duty to Mitigate.** The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment. The permittee shall also take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with the permit, including such accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying discharge.

E. **Duty to Provide Information.** The permittee shall furnish to LDEQ, within a reasonable time, any information which LDEQ may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the state administrative authority, upon request, copies of records required to be kept by this permit.

F. **Other Information.** When the permittee becomes aware that he or she failed to submit any relevant facts or submitted incorrect information in the Notice of Intent or in any other report to LDEQ, he or she shall promptly submit such facts or information.

G. **Signatory Requirements.** All Notices of Intent, SWPPPs, reports, certifications or information either submitted to LDEQ or the operator of a municipal separate storm sewer system, or that this permit requires be maintained by the permittee, shall be signed as follows.

1. All Notices of Intent shall be signed as follows:

a. For a corporation: by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:

(1) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision making functions for the corporation; or,

(2) The manager of one or more manufacturing, production, or operating facilities, provided: the regulated facility, including having the explicit or implicit duty of making major capital investment recommendations and initiating and directing other comprehensive measures to ensure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and the authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

NOTE: LDEQ does not require specific assignments or delegations of authority to responsible corporate officers identified in Part V.G.1.a.(1). **The agency will presume that these responsible corporate officers have the requisite authority to sign permit applications and Notices of Intent unless the corporation has notified the state administrative authority to the contrary. Corporate procedures governing authority to sign permit applications and Notices of Intent may provide for assignment or delegation to applicable corporate positions under Part V.G.1.a.(2) rather than to specific individuals.**

b. For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or

c. For a municipality, state, federal or other public agency: by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a federal agency includes:

(1) The chief executive officer of the agency, or
(2) A senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of EPA).

2. The SWPPP**,** all reports required by the permit and other information requested by LDEQ shall be signed by a person described in Part V.G.1, or by a duly authorized representative of that person. A person is a duly authorized representative only if:

a. The authorization is made in writing by a person described above in Part V.G.1;

b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company, (a duly authorized representative may thus be either a named individual or any individual occupying a named position); and,

c. The written authorization is submitted to the state administrative authority (a copy of the signed and dated written authorization shall be included in the SWPPP);

d. **Changes to authorization.** If an authorization under Part I.B is no longer accurate because a different operator has responsibility for the overall operation of the construction site, a new Notice of Intent satisfying the requirements of Part I.B must be submitted to the State Administrative Authority prior to or together with any reports, information, or applications to be signed by an authorized representative.

e. **Certification.** Any person signing documents under this Part shall make the following certifications:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage this system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I also certify that a storm water pollution prevention plan, including both construction and post construction controls, has been prepared for the site in accordance with the permit and that such plan complies with approved State, Tribal and/or local sediment and erosion plans or permits and/or storm water management plans or permits. I am aware that signature and submittal of the NOI is deemed to constitute my determination of eligibility under one or more of the requirements of Permit Part I.A.3.e(1),

related to the Endangered Species Act requirements. To the best of my knowledge, I further certify that such discharges and discharge related activities will not have an effect on properties listed or eligible for listing on the National Register of Historic Places under the National Historic Preservation Act, or are otherwise eligible for coverage under Part I.A.3.f of the permit. I am also aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

H. Penalties for Falsification of Reports. The Louisiana Revised Statutes LA R.S. 30:2076.2 provides that any person who knowingly violates an provision of the LPDES, or any order issued by the secretary under the LPDES, or any permit condition or limitation implementing any of such provisions in a permit issued under the LPDES by the secretary, and who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury, shall, upon conviction, be subject to a fine or not more than $250,000 or by imprisonment for not more than 15 years or both. A person which is an organization shall, upon conviction of violating this Section, by subject to a fine or not more than one million dollars. If a conviction of a person is for a violation committed after a first conviction of such person under this Section, the maximum punishment shall be doubled with respect to both fine and imprisonment.

I. Oil and Hazardous Substance Liability. Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under Section 311 of the Clean Water Act.

J. Property Rights. This permit does not convey any property rights of any sort, or any exclusive privilege.

K. Severability. If any provision of these rules and regulations, or the application thereof, is held to be invalid, the remaining provisions of these rules and regulations shall not be affected, so long as they can be given effect without the invalid provision. To this end, the provisions of these rules and regulations are declared to be severable.

L. Requiring an Individual Permit or an Alternative General Permit.

1. Applicants who fail to meet all permit eligibility conditions are not authorized and will be provided written notice of ineligibility. These operators may pursue coverage under an individual permit or alternative general permit by submitting the appropriate application form.

2. The LDEQ may require any person authorized by this permit to apply for and/or obtain either an individual LPDES permit or an alternative LPDES general permit. Any interested person may petition LDEQ to take action under this Part. Where LDEQ requires a discharger authorized to discharge under this permit to apply for another LPDES permit, LDEQ shall notify the discharger in writing that a permit application is required. This notification shall include a brief statement of the reasons for this decision, an application form, a statement setting a deadline for the discharger to file the application, and a statement that on the effective date of issuance or denial of the individual LPDES permit or the alternative general permit as it applies to the individual permittee, coverage under this general permit shall automatically terminate. Applications shall be submitted as indicated

in Part II.C (Addresses) of this permit. The LDEQ may grant additional time to submit the application upon request of the operator. If a discharger fails to submit in a timely manner an individual LPDES permit application as required by LDEQ under this Part, then the applicability of this permit to the individual LPDES permittee is automatically terminated at the end of the day specified by LDEQ for application submittal.

3. Any discharger authorized by this permit may request to be excluded from the coverage of this permit by applying for an individual permit or an alternative general permit. In such cases, the permittee shall submit an individual application, with reasons supporting the request, to LDEQ at the address indicated in Part II.C of this permit. The request may be granted by issuance of an individual permit or an alternative general permit if the reasons cited by the permittee are adequate to support the request.

4. When an individual LPDES permit is issued to a discharger otherwise subject to this permit, or the discharger is authorized to discharge under an alternative LPDES general permit, the applicability of this permit to the LPDES permittee is automatically terminated on the effective date of the individual permit or the date of authorization of coverage under the alternative general permit, whichever the case may be. When an individual LPDES permit is denied to an owner or operator otherwise subject to this permit, or the owner or operator is denied for coverage under an alternative LPDES general permit, the applicability of this permit to the LPDES permittee is automatically terminated on the date of such denial, unless otherwise specified by LDEQ.

M. State Laws.

1. Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or regulation under authority preserved by Section 510 of the Clean Water Act.

2. No condition of this permit shall release the permittee from any responsibility or requirements under other environmental statutes or regulations.

N. Proper Operation and Maintenance.

1. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

2. The permittee shall provide an adequate operating staff which is duly qualified to carry out operation, maintenance and other functions necessary to ensure compliance with the conditions of this permit.

O. Inspection and Entry.

The permittee shall allow LDEQ or an authorized representative (including an authorized contractor acting as a representative of the Administrator), or, in the case of a construction site which discharges through a municipal separate storm sewer, an authorized representative of the municipal operator or the separate storm sewer receiving the discharge, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit. Enter upon the permittee's premises where a discharge source is or might be located or in which monitoring equipment or records required by a permit are kept for inspection of sampling purposes. Most inspections will be unannounced and should be allowed to begin immediately, but in no case shall begin more than thirty (30) minutes after the time the inspector presents his/her credentials and announces the purpose(s) of the inspection. Delay in excess of thirty (30) minutes shall constitute a violation of this permit. However, additional time can be granted if the inspector or the Administrative Authority determines that the circumstances warrant such action;

2. Have access to and copy at reasonable times, any records that the department or its authorized representative determines are necessary for the enforcement of this permit. For records maintained in either a central or private office that is open only during normal office hours and is closed at the time of inspection, the records shall be made available as soon as the office is open, but in no case later than the close of business the next working day;

3. Inspect at reasonable times any facilities or equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

4. Sample or monitor at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by the Clean Water Act or the Louisiana Environmental Quality Act, any substances or parameters at any location.

P. Bypass of Treatment Facilities.

1. Bypass is the intentional diversion of waste streams from any portion of a treatment facility.

2. Bypass not exceeding limitations. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of Part VI.P.3 and 4 below.

3. Notice

a. Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice to the Office of Environmental Services, Water Permits Division, if possible at least ten days before the date of the bypass.

b. Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in LAC 33:IX.2701.L.6, (24-hour notice) and Part III.B.1, III.B.2, and III.B.3.

4. Prohibition of Bypass

a. Bypass is prohibited, and the state administrative authority may take enforcement action against a permittee for bypass, unless:

(1) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;

(2) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and,

(3) The permittee submitted notices as required by Part IV.P.3.

b. The state administrative authority may approve an anticipated bypass after considering its adverse effects, if the state administrative authority determines that it will meet the three conditions listed in Part VI.P.4.a.

Q. Upset Conditions.

1. Upset - an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

2. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of Part VI.Q.3 are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

3. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

a. An upset occurred and that the permittee can identify the cause(s) of the upset;

b. The permitted facility was at the time being properly operated;

c. The permittee submitted notice of the upset as required by LAC 33:IX.2701.L.6.b.ii and Part III.B.1, III.B.2. and III.B.3.; and,

d. The permittee complied with any remedial measures required by Part III.D (Discharge Compliance with Water Quality Standards).

4. Burden of proof. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

R. Removed Substances. Solids, sewage sludges, filter backwash, or other pollutants removed in the course of treatment or wastewater control shall be properly disposed of in a manner such as to prevent any pollutant from such materials from entering waters of the State, and in accordance with environmental regulations.

S. Prohibition for Tampering: Penalties.

1. LA R.S. 30:2025 provides for punishment of any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit.

2. LA R.S. 30:2076.2 provides for penalties for any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance.

T. Reporting Requirements.

1. Anticipated Noncompliance. The permittee shall give advance notice to the state administrative authority of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

U. Availability of Reports.

All recorded information (completed report forms or any public document) not classified as confidential information under R.S. 30:2030(A) and 30:2074(D) and designated as such in accordance with these regulations (LAC 33:IX.2323 and LAC 33:IX.6503) shall be made available to the public for inspection and copying during normal working hours in accordance with the Public Records Act, R.S. 44:1 et seq.

Claims of confidentiality for the following will be denied:

a. The name and address of any permit operator or permittee;

b. Permit applications, permits, and effluent data;

c. Information required by LPDES application forms provided by the state administrative authority under LAC 33:IX.2501 may not be claimed confidential. This includes information submitted on the forms themselves and any attachments used to supply information required by the forms.

V. Permit Actions.

This permit may be modified, revoked and reissued, or terminated for cause in accordance with LAC 33:IX.2903, 2905, 2907, 3105 and 6509. The causes may include, but are not limited to, the following:

a. Noncompliance by the permittee with any condition of the permit;

b. The permittee's failure in the application or during the permit issuance process to disclose fully all relevant facts, or the permittee's misrepresentation of any relevant facts at any time;

c. A determination that the permitted activity endangers human health or the environment and can only be regulated to acceptable levels by permit modification or termination;

d. A change in any condition that requires either a temporary or a permanent reduction or elimination of any discharge;

e. Failure to pay applicable fees under the provisions of LAC 33: IX. Chapter 13; or

f. Change of ownership or operational control.

The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

W. Monitoring and Reporting Requirements.

1. All sampling and testing shall be conducted in accordance with the methods prescribed by the latest approved 40 CFR 136, Tables A, B, C, D, E, F, G.

2. If effluent monitoring is required, samples shall be taken prior to mixing with the receiving water (immediately after exiting the treatment mechanism, if treatment is required.)

3. If treatment is required, provisions must be made during the installation of the treatment unit for obtaining a proper sample.

4. All samples collected from storm water discharge outfalls shall be collected from the discharge during normal operating hours, during the first hour of discharge. For discharges during periods when operating personnel are not on duty, sampling shall be no later than 8:00 a.m. the following morning.

5. Proper sampling techniques shall be used to ensure that analytical results are representative of pollutants in the discharge. Monitoring shall be conducted according to analytical, apparatus and materials, sample collection, preservation, handling, etc., procedures listed at 40 CFR Part 136, and in particular, Appendices A, B, and C. [LAC 33:IX.4901]

6. The flow measurement sample type for the effluent schedules contained in this general permit are specified as "estimate". Therefore, the permittee shall not be subject to the accuracy provisions for flow measurement established in the Standard Conditions of this permit. When collecting samples for permit compliance purposes, the flow value may be estimated using best engineering judgment. [LAC 33:IX.2701]

7. If a discharge is found to be in violation of specified limits, the permittee will be subject to enforcement action, including civil penalties, and may be required to obtain an individual permit.

8. Records of all monitoring information must be retained for a period of at least three (3) years from the date of the sample, measurement, report or application. These records shall include all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit. The permittee shall make available to this Office, upon request, copies of all monitoring information required by this permit.

Records of monitoring information shall also include:

a. The date, exact place, and time of sampling or measuring;
b. The individual(s) who performed the sampling or measurements;
c. The date(s) and time(s) analyses were begun;
d. The individual(s) who performed the analyses;
e. The analytical techniques or methods used;
f. The results of such analyses; and
g. The results of all Quality Control procedures.

9. Monitoring results for each discharge point must be reported on a Discharge Monitoring Report (DMR) form (EPA No. 3320-1 or and LDEQ approved substitute). If there is no discharge event at an outfall(s) during the sampling period, check "No Discharge" in the upper right corner of the DMR that is completed for that outfall.

All permittees who are required to monitor under Part I, pages 7 and 8 of the permit shall submit a DMR quarterly for each permitted outfall even if there were no discharges from that outfall during a particular monitoring period. Monitoring results for each Monitoring Frequency (1/month, 1/3 months, etc.) shall be summarized in a Discharge Monitoring Report. Complete one DMR per outfall for each reporting period (one DMR Form per month for sampling frequencies less than or equal to once per month), and submit the DMRs to LDEQ on a quarterly basis.

If more than one sample is obtained during the prescribed Measurement Frequency period, the results are averaged and report on the DMR. DMR General Instruction Number 5 defines "Average" as the arithmetic average (geometric average for bacterial parameters) of all sample measurements for each parameter obtained during the "Monitoring Period". Monitoring results obtained for a 1/month measurement frequency shall be summarized on one DMR for each month of the Monitoring Period, and the DMRs for the Monitoring Period shall be submitted to LDEQ quarterly.

The schedule for quarterly DMR submission is as follows:

Quarterly Submission

Monitoring Period	DMR Postmark Date
January, February, March	April 28th
April, May, June	July 28th
July, August, September	October 28th
October, November, December	January 28th

DMRs shall be submitted to the Enforcement Division, Office of Environmental Compliance, Department of Environmental Quality, P. O. Box 4312, Baton Rouge, LA 70821-4312. DMRs must be postmarked or hand delivered to LDEQ no later than the DMR Postmark Dates noted above in the schedule for Quarterly Submission.

In accordance with LAC 33:IX.2503.A and B, DMRs must be signed and certified by an authorized person. Be aware that LDEQ will accept laboratory results only from "LELAP accredited" laboratories.

The department laboratory accreditation program, Louisiana Environmental Laboratory Accreditation Program (LELAP) is designed to ensure the accuracy, precision, and reliability of the data generated as well as the use of department-approved methodologies in generation of that data. Laboratory data generated by commercial environmental laboratories that are not LELAP accredited will not be accepted by the department. Analysis performed by a laboratory that is not LELAP accredited will not be accepted by the department and the permittee will be required to retest using an accredited commercial laboratory.

Where retesting of effluent is not possible (i.e., data reported on DMRs for prior month's sampling), the data generated will be considered invalid and in violation of the LPDES permit.

Regulations on the Louisiana Environmental Accreditation Program and a list of labs that have applied for accreditation are available on the department website located under DIVISIONS -> LABORATORY SERVICES at the following link:

http://www.deq.louisiana.gov

Questions concerning the program may be directed to (225) 219-9800.

X. Inactive Plants.

Whenever a cement, concrete or asphalt plant covered under Permit Part I.A.2.d is inactive during the effluent limitations monitoring reporting period, the permittee shall submit a Discharge Monitoring Report (DMR) form indicating "No Discharge – Facility Inactive." For the purpose of this permit, inactive means a site that is not operating, is unstaffed (except for site security personnel or maintenance personnel making repairs which do not create a wastewater discharge), and has no process wastewater discharges during the effluent limitations monitoring period.

Y. Dilution.

A permittee shall not achieve any effluent concentration by dilution unless specifically authorized in the permit. A permittee shall not increase the use of process water or cooling water or otherwise attempt to dilute a discharge as a partial or complete substitute for adequate treatment to achieve permit limitations or water quality.

Z. Prohibitions for Asphalt Plants.

Neither hazardous nor non-biodegradable asphalt releasers nor diesel fuel shall be used as an asphalt releaser in the bed of dump trucks or at the plant on moving parts unless the releaser or diesel fuel is captured and contained. At no time shall these releasing agents or diesel fuel be discharged to the ground, surface waters, or be allowed to come in contact with storm water runoff. The use of non-hazardous, biodegradable releasing agents shall be considered as an alternative to the hazardous, non-biodegradable releasers or diesel fuel.

Part VII. REOPENER CLAUSE

If there is evidence indicating that the discharges authorized by this permit cause, have the reasonable potential to cause, or contribute to a violation of a water quality standard, the discharger may be required to obtain an individual permit or an alternative general permit in accordance with Part VI.L of this permit or the permit may be modified to include different requirements and/or limitations.

Part VIII. TERMINATION OF COVERAGE

A. Notice of Termination. Where a site has been finally stabilized and all storm water discharges from construction activities that are authorized by this permit are eliminated, or where the operator of all storm water discharges at a facility changes, the permittee must submit a Notice of Termination (NOT) that is signed in accordance with Part VI.G of this permit. The NOT shall include the following information:

1. the name (or other identifier), street address (description of location if no street address is available), city, parish, and the latitude and longitude of the approximate center of the construction site/project for which the notification is submitted;

2. the name, address and telephone number of the permittee submitting the Notice of Termination;

3. the LPDES permit authorization number for the storm water discharge identified by the Notice of Termination;

4. an indication of whether the storm water discharges associated with construction activity have been eliminated or the operator of the discharges has changed; and

5. the following certification signed in accordance with Part VI.G (Signatory Requirements) of this permit:

> *"I certify under penalty of law that all storm water discharges associated with construction activity from the portion of the identified facility where I was an operator have ceased or have been eliminated or that I am no longer an operator at the construction site. I understand that by submitting this Notice of Termination, I am no longer authorized to discharge storm water associated with construction activity under this general permit, and that discharging pollutants in storm water associated with construction activity to waters of the State is unlawful under the Clear Water Act where the discharge is not authorized by an LPDES permit. I also understand that the submittal of this Notice of Termination does not release an operator from liability for any violation of this permit or the Clean Water Act."*

For the purposes of this certification, elimination of storm water discharges associated with construction activity means that all disturbed soils at the portion of the construction site where the operator had control have been finally stabilized and temporary erosion and sediment control measures have been removed or will be removed at an appropriate time to ensure final stabilization is maintained, or that all storm water discharges associated with construction activities from the identified site that are authorized by an LPDES general permit have

otherwise been eliminated from the portion of the construction site where the operator had control.

You should be aware that final stabilization often takes time (weeks or even months), especially during times of low rainfall or during the colder months of the year. You should not submit a Notice of Termination until you have met the final stabilization requirements of the permit (see Part IX). Termination of permit coverage does not relieve the permittee of any future liabilities associated with environmental damage caused by the permittee's activities.

B. Addresses. All Notices of Termination are to be sent, using the form provided by the State Administrative Authority (or a photocopy thereof), to the Water Permits Division at the address specified on the NOT form.

Part IX. DEFINITIONS

"Aggregate Spray" means potable water used to cool aggregate stockpiles and to maintain the specific gravity of light weight aggregate.

"Alternative permit" means another permit – either an individual permit or a different general permit.

"Best Management Practices" ("BMPs") means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants to waters of the United States. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

"Bypass" means the intentional diversion of waste streams from any portion of a treatment facility.

"Control Measure" as used in this permit, refers to any Best Management Practice or other method used to prevent or reduce the discharge of pollutants to waters of the United States.

"Commencement of Construction" means the initial disturbance of soils associated with clearing, grading, or excavating activities or other construction activities.

"Common Plan of Development" means a contiguous (sharing a boundary or edge; adjacent; touching) area where multiple separate and distinct construction activities may be taking place at different times on different schedules under one plan. Such a plan might consist of many small projects (e.g., a common plan of development for a residential subdivision might lay out the streets, house lots, and areas for parks, schools and commercial development that the developer plans to build or sell to others for development.) All these areas would remain part of the common plan of development or sale. The following items can be used as guidance for deciding what might or might not be considered a "Common Plan of Development or Sale:"

> If a smaller project is part of a large common plan of development or sale that collectively will disturb five or more acres (e.g., you are building on 6 half-acre residential lots in a 10-acre development or are putting in a fast food restaurant on a ¾ acre pad that is part of a 20 acre retail center) permit coverage is needed.
>
> If a small portion of the original common plan of development remains undeveloped and there has been a period of time where there is no ongoing construction activities (i.e., all areas are either undisturbed or have been finally stabilized), you may re-evaluate the original project based on the acreage remaining from the original "common plan." If less than five but more than one acre remains to build out the original "common plan", coverage under this permit may not be required. However, you will need to comply with the terms and conditions of the Small Construction General Permit. If less than one acre remains of the original common plan, your individual project may be treated as a part of a less than one acre development and no permit would be required.

If you have a long-range master plan of development where some portions of the master plan are a conceptual rather than a specific plan of future development and the future construction activities would, if they occur at all, happen over an extended period of time, you may consider the "conceptual" phases of development to be separate a "common plans" provided the periods of construction for the physically interconnected phases will not overlap.

A public entity (a municipality, state or federal agency) need not consider all construction projects within their entire jurisdiction to be part of an overall "common plan." Only the interconnected parts of a project would be considered to be a "common plan."

Where discrete construction projects within a larger common plan of development or sale are located ¼ mile or more apart and the area between the projects is not being disturbed, each individual project can be treated as a separate plan of development or sale provided any interconnecting road, pipeline or utility project that is part of the same "common plan" is not concurrently being disturbed.

"CWA" means the Clean Water Act or the Federal Water Pollution Control Act, 33 U.S.C §1251 et seq.

"Daily Maximum" discharge limitations means the highest allowable "daily discharge" during the calendar month.

"Discharge of Storm Water Associated with Construction Activity" as used in this permit, refers to storm water "point source" discharges from areas where soil disturbing activities (e.g., clearing, grading, or excavation, etc.), or construction materials or equipment storage or maintenance (e.g., fill piles, fueling, etc.) are located.

"Final Stabilization" means that:

(i) all soil disturbing activities at the site have been completed, and that a **uniform** (e.g., evenly distributed, without large bare areas) **perennial vegetative cover** with a density of 70% of the native background vegetative cover for the area has been established on all unpaved areas and areas not covered by permanent structures, or equivalent permanent stabilization measures (such as the use of riprap, gabions, or geo-textiles) have been employed. Establishing at least 70% of the natural cover of self-sustaining native vegetation meets the vegetative cover criteria for final stabilization. For example, if the native vegetation covers 50% of the ground prior to commencement of construction activities, 70% of 50% would require 35% total cover for final stabilization.

A site does not meet the final stabilization permit requirement until self-sustaining native vegetation is established uniformly over each disturbed area on the site. Stabilizing seven of ten slopes, or leaving an area equivalent to 30 percent of the disturbed area completely unstabilized will not satisfy the **uniform vegetative cover** standard.

(ii) In arid and semi arid areas only all soil disturbing activities at the site have been completed and both of the following criteria have been met:

a. Temporary erosion control measures (e.g., degradable rolled erosion control product) are selected, designed, and installed along with an appropriate seed base to provide erosion control for at least three years without active maintenance by you.

b. The temporary erosion control measures are selected, designed, and installed to achieve 70 percent vegetative coverage within three years.

(iii) For individual lots in residential construction, final stabilization means that either:

a. The homebuilder has completed final stabilization as specified above, or

b. The homebuilder has established temporary stabilization including perimeter controls for an individual lot prior to occupation of the home by the homeowner and informing the homeowner of the need for, and benefits of, final stabilization.

(v) For construction projects on land used for agricultural purposes (e.g., pipelines across crop or range land, staging areas for highway construction, etc.) final stabilization may be accomplished by returning the disturbed land to its preconstruction agricultural use. Areas disturbed that were not previously used for agricultural activities, such as buffer strips immediately adjacent to "waters of the State," and areas which are not being returned to their preconstruction agricultural use must meet the final stabilization criteria (i) or (ii) or (iii) above.

"Grab Sample" means an individual sample collected in less than 15 minutes.

"Louisiana Pollutant Discharge Elimination System (LPDES)" means those portions of the Louisiana Environmental Quality Act and the Louisiana Water Control Law, and all regulations promulgated under their authority, which are deemed equivalent to the National Pollutant Discharge Elimination System (NPDES) under the Clean Water Act in accordance with Section 402 of the Clean Water Act and all applicable federal regulations.

"mg/L" means milligrams per liter or parts per million (ppm).

"Monthly Average" (also known as Daily Average), other than for fecal coliform bacteria, discharge limitations are calculated as the sum of all "daily discharge(s)" measured during a calendar month divided by the number of "daily discharge(s)" measured during that month. When the permit establishes monthly average concentration effluent concentration means the arithmetic average (weighted by flow) of all "daily discharge(s)" of concentration determined during the calendar month where C = daily discharge concentration, F = daily flow, and n = number of daily samples, monthly average discharge =

$$\frac{C_1F_1 + C_2F_2 + \ldots + C_nF_n}{F_1 + F_2 + \ldots + F_n}$$

When the permit establishes monthly average concentration effluent limitations or conditions, and the flow is not measured as a continuous record, then the monthly average concentration means the arithmetic average of all "daily discharge(s)" of concentration determined during the calendar month.

The monthly average for fecal coliform bacteria is the geometric mean of the values of all effluent samples collected during a calendar month.

"Municipal Separate Storm Sewer System (MS4)" is a publicly-owned conveyance or system of conveyances that discharges to waters of the U.S. and is designed or used for collecting or conveying storm water, is not a combined sewer, and is not part of a publicly-owned treatment works (POTW).

"National Pollutant Discharge Elimination System" means the national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under Sections 307, 318, 402, and 405 of the Clean Water Act.

"NOI" means notice of intent to be covered by this permit (see Part II of this permit).

"NOT" means notice of termination of permit coverage (see Part VII of this permit).

"Operator" means any party associated with the construction project that meets either of the following two criteria: (1) the party has operational control over project specifications (including the ability to make modifications in those specifications), or (2) the party has day-to-day operational control of those activities at a project site which are necessary to ensure compliance with the storm water pollution prevention plan or other permit conditions (e.g., they are authorized to direct workers at the site to carry out activities identified in the storm water pollution prevention plan or comply with other permit conditions).

"Person" means an individual, association, partnership, corporation, municipality, state or federal agency, or any agency thereof, or an agent or employee thereof.

"Point Source" means any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel, or other floating craft from which pollutants are, or may be, discharged. This term does not include return flows from irrigated agriculture or agricultural storm water runoff.

"Process Wastewater" means any water which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product. Process wastewater may include interior or exterior washing of plant trucks or product receptacles.

"Qualified personnel" means a person knowledgeable in the principles and practice of erosion and sediment controls who possesses the skills to assess conditions at the construction site that could impact storm water quality and to assess the effectiveness of any sediment and erosion control measures selected to control the quality of storm water discharges from the construction activity.

"Runoff coefficient" means the fraction of total rainfall that will leave the site as runoff.

"Site" means the land or water area where any "facility or activity" is physically located or conducted, including adjacent land used in connection with the facility or activity.

"State Administrative Authority" means the Secretary of the Department of Environmental Quality or his designee, or the appropriate assistant secretary or his designee.

"Storm Water" means storm water runoff, snow melt runoff, and surface runoff and drainage.

"Storm Water Associated with Industrial Activity" is defined at LAC 33:IX.2511.B.14 and incorporated here by reference.

"Storm Water Discharge Associated with Small Construction Activity" is defined at LAC 33:IX.2511.B.15. This includes discharges of storm water from construction activities including clearing, grading and excavating that result in land disturbance of equal to or greater than one acre and less than five acres. Small construction activity also includes the disturbance of less than one acre of total land area that is part of a larger common plan of development or sale, if the larger common plan will ultimately disturb equal to or greater than one or less than five acres. Small construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of the facility.

"Total Suspended Solids (TSS)" means the amount of solid material suspended in water commonly expressed as a concentration in terms of mg/L.

"Treatment Works" means any devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage and industrial wastes of a liquid nature to implement Section 201 of the Clean Water Act, or necessary to recycle or reuse water at the most economical cost over the estimated life of the works, including intercepting sewers, sewage collection systems, pumping, power and other equipment, and their appurtenances, extension, improvement, remodeling, additions, and alterations thereof.

"Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

"Waters of the State": for the purposes of the Louisiana Pollutant Discharge Elimination System, all surface waters within the state of Louisiana and, on the coastline of Louisiana and the Gulf of Mexico, all surface waters extending therefrom three miles into the Gulf of Mexico. For purposes of the LPDES, this includes all surface waters that are subject to the ebb and flow of the tide, lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, natural ponds, impoundments of waters within the state of Louisiana otherwise defined as *Waters of the United States* in 40 CFR 122.2, and tributaries of all such waters. *Waters of the State* does not include waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of the Clean Water Act, 33 U.S.C. 1251, et seq.

ADDENDUM A

ENDANGERED SPECIES GUIDANCE

ENDANGERED SPECIES GUIDANCE
CONSTRUCTION ACTIVITIES FOR FIVE ACRES OR MORE

I. INSTRUCTIONS

A list of endangered and threatened species that EPA has determined may be affected by the activities covered by the Construction General Permit is available on the LDEQ Internet website at www.deq.louisiana.gov/portal/. Go through the following links to find the Current Endangered Species List: INFO ABOUT Water – Permits – LPDES Permits, Information, and Applications – OTHER LPDES DOCUMENTS – Current Endangered Species Listing. These species are listed by parish. In order to be eligible for coverage under this permit, operators must:

Determine whether any species listed in this Guidance or critical habitat are in proximity to the facility,

Pursuant to Permit Part I.A.3.e follow the procedures found in this Guidance to protect listed endangered and threatened species and designated critical habitat and determine that the storm water discharges and BMPs to control storm water run off covered under this permit meet one or more of the eligibility requirements of Part I.A.3.e.(1) of this permit. Signature and submittal of the Notice of Intent form is deemed to constitute the Operator's compliance with eligibility requirements for permit coverage.

To determine permit eligibility and to avoid unauthorized impacts upon threatened or endangered species or on the critical habitat for those species, you must follow steps 1 through 4 (and 5 if applicable), below when completing the NOI form and when developing the pollution prevention plan.

NOTE: At any step in the determination, applicants may contact the U.S. Fish and Wildlife Service (FWS) for guidance. That request should be in writing and should include a description of the facility and a topographic map depicting the locations of the facility, the proposed construction activities, and the associated storm water discharges.

U.S. Fish and Wildlife Service
646 Cajundome Blvd.
Suite 400
Lafayette, LA 70506
(337) 291-3108

STEP 1: DETERMINE IF THE CONSTRUCTION SITE OR ASSOCIATED STORM WATER DISCHARGES ARE WITHIN THE VICINITY OF FEDERALLY LISTED THREATENED OR ENDANGERED SPECIES, OR THEIR DESIGNATED CRITICAL HABITAT.

If either the proposed site or the path of stormwater from the site to the receiving stream is in a parish included on the Endangered Species List, the applicant should proceed to Step 2 below. If, however, neither is located in a listed parish, then the applicant should enter “no” in Section I.D.3 of the NOI, and move on to the next item.

If no species are listed in the site’s parish or if a facility’s parish is not found on the list, the applicant is eligible for permit coverage and may indicate in the Notice of Intent that no species are found in the project area and certify that it is eligible for permit coverage by marking “No” on the NOI. Where a project is located in more than one parish, the lists for all parishes shall be reviewed.

STEP 2: DETERMINE IF ANY SPECIES MAY BE FOUND "IN PROXIMITY" TO THE CONSTRUCTION ACTIVITY'S STORM WATER DISCHARGES:

A species is in proximity to a construction activity's storm water discharge when the species is:

- Located in the path or immediate area through which or over which contaminated point source storm water flows from construction activities to the point of discharge into the receiving water; or

- Located in the immediate vicinity of, or nearby, the point of discharge into receiving waters; or

- Located in the area of a site where storm water BMPs are planned or are to be constructed.

The area in proximity to be searched/surveyed for listed species will vary with the size and structure of the construction activity, the nature and quantity of the storm water discharges, and the type of receiving waters. Given the number of construction activities potentially covered by the permit, no specific method to determine whether species are in proximity is required for permit coverage. Instead, operators should use the method or methods which best allow them to determine to the best of their knowledge whether species are in proximity to their particular construction activities. These methods may include:

- Conducting visual inspections: This method may be particularly suitable for construction sites that are smaller in size or located in non-natural settings such as highly urbanized areas or industrial parks where there is little or no natural habitat, or for construction activities that discharge directly into municipal storm water collection systems.

- Contacting the nearest State or Tribal Wildlife Agency or U.S. Fish and Wildlife Service (FWS) offices. Many endangered and threatened species are found in well-defined areas or habitats. That information is frequently known to State, Tribal, or Federal wildlife agencies.

- Contacting local/regional conservation groups. These groups inventory species and their locations and maintain lists of sightings and habitats.

- Conducting a formal biological survey. Larger construction sites with extensive storm water discharges may choose to conduct biological surveys as the most effective way to assess whether species are located in proximity and whether there are likely adverse effects.

- Conducting an Environmental Assessment Under the National Environmental Policy Act (NEPA). Some construction activities may require environmental assessments under NEPA. Such assessments may indicate if listed species are in proximity. (Construction General Permit coverage does not trigger NEPA because it does not regulate any dischargers subject to New Source Performance Standards under Section 306 of the Clean Water Act. See CWA 511(c). However, some construction activities might require review under NEPA because of Federal funding or other Federal nexus.)

If no species are in proximity, an operator is eligible for Construction General Permit coverage under Permit Part I.A.3.E.(1)(a).

If listed species are found in proximity to a facility, operators must indicate the location and nature of this presence in the storm water pollution prevention plan and follow step 3 below.

STEP 3: DETERMINE IF SPECIES OR CRITICAL HABITAT COULD BE ADVERSELY AFFECTED BY THE CONSTRUCTION ACTIVITY'S STORM WATER DISCHARGES OR BY BMPs TO CONTROL THOSE DISCHARGES.

Scope of Adverse Effects: Potential adverse effects from storm water include:

- Hydrological. Storm water may cause siltation, sedimentation or induce other changes in the receiving waters such as temperature, salinity or pH. These effects will vary with the amount of storm water discharged and the volume and condition of the receiving water. Where a storm water discharge constitutes a minute portion of the total volume of the receiving water, adverse hydrological effects are less likely.

- Habitat. Storm water may drain or inundate listed species habitat.

- Toxicity. In some cases, pollutants in storm water may have toxic effects on listed species.

The scope of effects to consider will vary with each site. Operators must also consider the likelihood of adverse effects on species from any BMPs to control storm water. Most adverse impacts from BMPs are likely to occur from the construction activities. However, it is possible that the operation of some BMPs (for example, larger storm water retention ponds) may affect endangered and threatened species.

If adverse effects are determined to be not likely, then the operator is eligible for permit coverage under Part I.A.3.e(1)(a).

If adverse effects are likely, operators should follow step 4 below.

STEP 4: DETERMINE IF MEASURES CAN BE IMPLEMENTED TO AVOID ANY ADVERSE EFFECTS:

If an operator determines that adverse effects cannot be ruled out or are likely, it can receive coverage if appropriate measures are undertaken to avoid or eliminate any actual or potential adverse effects prior to applying for permit coverage. These measures may involve relatively simple changes to construction activities such as re-routing a storm water discharge to bypass an area where species are located, relocating BMPs, or limiting the size of construction activity that will be subject to storm water discharge controls.

At this stage, operators must contact the FWS (or the National Marine Fisheries Service if referred to that Service by FWS) to see what appropriate measures might be suitable to avoid or eliminate adverse impacts to listed species and/or critical habitat. (See 50 CFR 402.13(b)). This can entail the initiation of informal consultation with the FWS (and/or NMFS, if appropriate) which is described in more detail below at step 5.

If operators adopt measures to avoid or eliminate adverse effects, they must continue to abide by them during the course of permit coverage. These measures must be described in the storm water pollution prevention plan and may be enforceable as permit conditions.

If appropriate measures to avoid the likelihood of adverse effects are not available to the operator, the operator should follow step 5 below.

STEP 5: DETERMINE IF THE ELIGIBILITY REQUIREMENTS OF PART I.A.3.E.(1)(b)-(e) CAN BE MET.

Where adverse effects are likely, the operator must contact FWS. Operators may still be eligible for permit coverage if any likelihood of adverse effects is addressed through meeting the criteria of Part I.A.3.e.(1)(b)-(e) of the permit if:

- I.A.3.e.(1)(b). The operator's activity has received previous authorization through an earlier Section 7 consultation or issuance of a Endangered Species Act (ESA) Section 10 permit (incidental taking permit) and that authorization addressed storm water discharges and/or BMPs to control storm water runoff (e.g., developer included impact of entire project in consultation over a wetlands dredge and fill permit under Section 7 of the ESA).

OR

- I.A.3.e.(1)(c). The operator's activity was previously considered as part of a larger, more comprehensive assessment of impacts on endangered and threatened species and /or critical habitat under Section 7 or Section 10 of the Endangered Species Act which accounts for storm water discharges and BMPs to control storm water runoff (e.g., where an area-wide habitat conservation plan and Section 10 permit is issued which addresses impacts from construction activities including those from storm water or a NEPA review is conducted which incorporates ESA Section 7 procedures).

OR

- I.A.3.e.(1)(d). Consultation with the FWS (or NMFS, if appropriate) for the operator's storm water discharges and BMPs to control storm water runoff results in either: 1) FWS/NMFS written concurrence with a finding of no likelihood of adverse effects (see 50 CFR 402.13) or 2) issuance of a biological opinion in which FWS (or NMFS) finds that the action is not likely to jeopardize the continued existence of listed endangered or threatened species or result in the adverse modification or destruction of critical habitat (see 50 CFR 403.14(h)).

  Any terms and conditions developed through consultations to protect listed species and critical habitat must be incorporated into the pollution prevention plan. As noted above, operators must initiate consultation during Step 4 above (upon becoming aware that endangered and threatened species are in proximity to the facility).

OR

- I.A.3.e.(1)(e). The operator's activity was considered as part of a larger, more comprehensive site-specific assessment of impacts on endangered and threatened species by the owner or other operator of the site when it developed a SWPPP and that permittee met the eligibility requirements stated in items I.A.3.e.(1)(a), (b), (c), or (d) of the permit (e.g., owner was able to determine there would be no adverse impacts for the project as a whole under item (a), so contractor meets the eligibility requirements stated in item (e)). Utility companies applying for area-wide permit coverage meet the eligibility requirements stated in item (e) since authorization to discharge is contingent on a principal operator of a construction project having been granted coverage under this, or an alternative LPDES permit for the areas of the site where utilities installation activities will occur.

The determination of eligibility under the conditions of permit Parts I.A.3.e.(1) (b)-(e) shall be documented in the facility's SWPPP and copies of all applicable documents, such as FWS approval letters, included in the SWPPP. The operator must comply with any terms and conditions imposed under the eligibility requirements of permit Parts I.A.3.e.(1)(a), (b), (c), (d), (e) to ensure that storm water discharges or BMPs to control storm water runoff are protective of listed endangered and threatened species and/or critical habitat. Such terms and conditions must be incorporated in the operator□s storm water pollution prevention plan.

If the eligibility requirements of Part I.A.3.e.(1)(a)-(e) cannot be met then the operator may not receive coverage under this permit. Operators should then consider applying to LDEQ for an individual permit.

This permit does not authorize any taking (as defined under Section 9 of the Endangered Species Act) of endangered or threatened species unless such takes are authorized under Sections 7 or 10 the Endangered Species Act. Operators who believe their construction activities may result in takes of listed endangered and threatened species should be sure to get the necessary coverage for such takes through an individual consultation or Section 10 permit.

This permit does not authorize any storm water discharges or BMPs to control storm water runoff that are likely to jeopardize the continued existence of any species that are listed as endangered or threatened under the Endangered Species Act or result in the adverse modification or destruction of designated critical habitat.

II. ENDANGERED SPECIES PARISH LIST

See http://www.deq.louisiana.gov/portal/. Click on Info About **Water**, then "LPDES Permits, Information, . . ." under **Permits**, then "Current Endangered Species Listing" under **Other LPDES Documents**.

ADDENDUM B

NOTICE OF INTENT (NOI) FORM

STATE OF LOUISIANA
DEPARTMENT OF ENVIRONMENTAL QUALITY

Office of Environmental Services, Water Permits Division
Post Office Box 4313
Baton Rouge, LA 70821-4313
PHONE#: (225) 219-3181

LPDES NOTICE OF INTENT (NOI) TO DISCHARGE STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITY GREATER THAN 5 ACRES

(Attach additional pages if needed.)

Submission of this Notice of Intent (NOI) constitutes notice that the party identified in Section I of this form intends to be authorized by an LPDES permit issued for stormwater discharges associated with construction activity in Louisiana. **In order to be automatically authorized under General Permit LAR100000 you must submit a complete and accurate NOI to LDEQ.**

EVERY ITEM MUST BE COMPLETED.

Submission of this Notice of Intent also constitutes that implementation of the Storm Water Pollution Prevention Plan required under the general permit will begin at the time the permittee commences work on the construction project identified in Section II below.

SECTION I - FACILITY INFORMATION

A. Permit is to be issued to the following: (must be a party having operational control over construction plans and specifications and /or a party having day-to-day operational control over those activities at a project site which are necessary to ensure compliance with the storm water pollution prevention plan or other permit conditions LAC 33:IX.2501.B and LAC 33:IX.2503.A and B).

1. Legal Name of Applicant
(Company, Partnership, Corporation, etc.) _____

Project Name _____
(NOTE: Only one NOI needs to be submitted to cover all of the permittee's activities on the common development or sale (e.g., you do not need to submit a separate NOI for each separate lot in a **residential subdivision** or for two separate buildings being constructed on the same property, provided your SWPPP covers each area for which you are the operator.)

Mailing Address _____

_____ Zip: _____ Phone #: _____

If the applicant named above is not also the owner, state owner name, phone # and address.

_____

_____

Check status: ☐ Federal ☐ Parish ☐ Municipal
☐ State ☐ Public ☐ Private ☐ Other: _____

2. Location of project. Provide a specific address, street, road, highway, interstate, and/or River Mile/Bank location of the project for which the NOI is being submitted.

_____

City _____ Zip Code_____ Parish_____

SECTION I - FACILITY INFORMATION

Front Gate Coordinates:

Latitude: ____deg. _____min. _____sec. Longitude: __deg. _____ min. ____sec.

Method of Coordinate Determination: _____

(ex:http://terraserver-usa.com/Quad Map, Previous Permit, website, GPS)

Is the facility located on Indian Lands? ☐ Yes ☐ No

B. Stormwater Pollution Prevention Plan Information.

1. Has the Stormwater Pollution Prevention Plan (SWPPP) been prepared? (NOTE: The SWPPP must be prepared prior to submittal of the NOI. Do **not** submit SWPPP with this NOI.)

   ☐ Yes ☐ No

2. Indicate address of location of SWPPP if different from Project Location. **(N/A if SWPPP is located at the construction site.)**

   Address _____

   City _____ State _____ Zip _____

C. Location Information

1. Estimated Construction Start Date: (mo/day/yr) _____
2. Estimated Construction Completion Date: (mo/day/yr) _____
3. Estimate of area to be disturbed (to nearest acre) _____
4. Type of facility being constructed: **(circle one)** Subdivision, Mall, Retail Outlet, Industrial Park, Business, Other (explain) _____
5. Is the project part of a larger development or subdivision? ☐ Yes ☐ No

   If yes, provide the name of the development or subdivision. _____

D. Discharge Information

1. Indicate how the storm water run-off reaches state waters (named water bodies). This will usually be either *directly*, by *open ditch* (if it is a highway ditch, indicate the highway), or by *pipe*. Please specifically name all of the minor water bodies that your discharge will travel through on the way to a major water body. This information can be obtained from U.S.G.S. Quadrangle Maps. Maps can also be obtained online at http://map.deq.state.la.us/ or www.topozone.com. Private map companies can also supply you with these maps. If you cannot locate a map through these sources you can contact the Louisiana Department of Transportation and Development at the address on the first page of this form.

   By _____(effluent pipe, ditch,

   thence into _____(effluent pipe, ditch,

   thence into _____(Parish drainage ditch, canal, etc.);

   thence into _____(named bayou, creek, stream, etc.);

2. Based on Appendix C, the Outstanding Natural Resource Water (ONRW) list, does your stormwater run-off flow directly into a waterbody listed as an ONRW?

   ☐ Yes ☐ No

NOTE: If the discharge will ultimately enter a scenic stream, contact the Louisiana Department of Wildlife and Fisheries (LDWF) Scenic Stream Division at 318-343-4044 for direction regarding how to comply with their requirements.

SECTION I - FACILITY INFORMATION

3. Based on Appendix A, Endangered Species Guidance, are there any listed endangered or threatened species in the project area?

   ☐ Yes ☐ No

   NOTE: Use the Endangered Species Guidance in Appendix A to determine if there are listed endangered or threatened species in the project area. Applicants should contact the U. S. Fish and Wildlife Service (address is in Appendix A) for guidance if they need assistance in making a determination.

4. Based on Appendix B, Historic Properties Guidance, are any historic properties listed or eligible for listing on the National Register of Historic Places located on the facility or in proximity to the discharge?

   ☐ Yes ☐ No

5. Was the State Historic Preservation Office (see Part I.A.3.f of the permit) involved in your determination of eligibility?

   ☐ Yes ☐ No

E. Additional Discharge Information

1. Will the facility being constructed result in a discharge that will require a water discharge permit (including sanitary wastewater, such as a subdivision or apartment complex)?

   ☐ Yes ☐ No

2. If yes, the party or developer responsible for construction plans and specifications must provide this information to: DEQ, OES, P.O. Box 4313, Baton Rouge, LA 70821-4313, Attn: Water Permits Division, and obtain a preliminary determination whether permit limits may be more stringent. **Failure to submit this information may result in denial of this and/or any future applications for discharge of wastewater to waters of the state. The "Request for Preliminary Determination of LPDES Permit Issuance Form" requests the information referenced above and can be accessed on our web page http://www.deq.louisiana.gov under DIVISIONS, Water Permits, LPDES Permits, LPDES forms.**

SECTION II – LAC 33.I.1701 REQUIREMENTS

A. Does the company or owner have federal or state environmental permits in other states that are identical to, or of a similar nature to, the permit for which you are applying? (This requirement applies to all individuals, partnerships, corporations, or other entities who own a controlling interest of 50% or more in your company, or who participate in the environmental management of the facility for an entity applying for the permit or an ownership interest in the permit.)

☐ Permits in other states (list states): _____

☐ No other environmental permits.

B. Do you owe any outstanding fees or final penalties to the Department? ☐ Yes ☐ No

If yes, please explain.

_____

C. Is your company a corporation or limited liability company? ☐ Yes ☐ No

If yes, is the corporation or LLC registered with the Secretary of State? ☐ Yes ☐ No

SECTION III - SIGNATURE

According to the Louisiana Water Quality Regulations, LAC 33:IX.2503, the following requirements shall apply to the signatory page in this application:

Chapter 25. Permit Application and Special LPDES Program Requirements

2503. Signatories to permit applications and reports

A. All permit applications shall be signed as follows:

1. For a corporation - by a responsible corporate officer. For the purpose of this Section responsible corporate officer means:

   (a) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or

   (b) The manager of one or more manufacturing, production, or operating facilities provided: the manager is authorized to make management decisions that govern the operation of the regulated facility, including having the explicit or implicit duty of making major capital investment recommendations and initiating and directing other comprehensive measures to ensure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken together complete and accurate information for permit application requirements; and the authority to sign documents has been assigned or delegated to the manager in accordance with corporation procedures.

NOTE: LDEQ does not require specific assignments or delegations of authority to responsible corporate officers identified in the Permit **Standard Permit Conditions, Part VI.G.1.a(1)** The agency will presume that these responsible corporate officers have the requisite authority to sign permit applications unless the corporation has notified the state administrative authority to the contrary. Corporate procedures governing authority to sign permit applications may provide for assignment or delegation to applicable corporate positions under Permit **Standard Permit Conditions, Part VI.G.1a.(2)** rather than to specific individuals.

2. For a partnership or sole proprietorship - by a general partner or the proprietor, respectively; or

3. For a municipality, state, federal or other public agency – by either a principal executive officer or ranking elected official. For the purposes of this section a principal executive officer of a federal agency includes:

   (a) The chief executive officer of the agency, or

   (b) A senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of EPA).

CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage this system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I also certify that a storm water pollution prevention plan, including both construction and post construction controls, has been prepared for the site in accordance with the permit and that such plan complies with approved State, Tribal and/or local sediment and erosion plans or permits and/or storm water management plans or permits. I am aware that signature and submittal of the NOI is deemed to constitute my determination of eligibility under one or more of the requirements of Permit Part I.A.3.e(1), related to the Endangered Species Act requirements. To the best of my knowledge, I further certify that such discharges and discharge related activities will not have an effect on properties listed or eligible for listing on the National Register of Historic Places under the National Historic Preservation Act, or are otherwise eligible for coverage under Part I.A.3.f of the permit. I am also aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

NOTE: **SIGNATURE MUST COMPLY WITH REQUIREMENTS STATED ABOVE IN SECTION III.**

Signature _____

Printed Name _____

Title _____

Company _____

Date _____

Telephone _____

*****ANY NOI THAT DOES NOT CONTAIN ALL OF THE REQUESTED INFORMATION WILL BE CONSIDERED INCOMPLETE. NOI PROCESSING CANNOT PROCEED UNTIL ALL REQUIRED INFORMATION HAS BEEN SUBMITTED**.

APPENDIX A

ENDANGERED SPECIES GUIDANCE – LARGE CONSTRUCTION GP

I. INSTRUCTIONS

A list of endangered and threatened species that EPA has determined may be affected by the activities covered by the Construction General Permit is available under OTHER LPDES DOCUMENTS in http://www.deq.louisiana.gov/portal/Default.aspx?tabid=243. These species are listed by parish. In order to be eligible for coverage under this permit, operators must:

Determine whether any species listed in this Guidance or critical habitat are in proximity to the facility,

Pursuant to Permit Part I.A.3.e follow the procedures found in this Guidance to protect listed endangered and threatened species and designated critical habitat and determine that the storm water discharges and BMPs to control storm water run off covered under this permit meet one or more of the eligibility requirements of Part I.A.3.e.(1) of this permit. Signature and submittal of the Notice of Intent form is deemed to constitute the Operator's compliance with eligibility requirements for permit coverage.

To determine permit eligibility and to avoid unauthorized impacts upon threatened or endangered species or on the critical habitat for those species, you must follow steps 1 through 4 (and 5 if applicable), below when completing the NOI form and when developing the pollution prevention plan.

NOTE: At any step in the determination, applicants may contact the U.S. Fish and Wildlife Service (FWS) for guidance. That request should be in writing and should include a description of the facility and a topographic map depicting the locations of the facility, the proposed construction activities, and the associated storm water discharges.

U.S. Fish and Wildlife Service
646 Cajundome Blvd.
Suite 400
Lafayette, LA 70506
(337) 291-3108

STEP 1: DETERMINE IF THE CONSTRUCTION SITE OR ASSOCIATED STORM WATER DISCHARGES ARE WITHIN THE VICINITY OF FEDERALLY LISTED THREATENED OR ENDANGERED SPECIES, OR THEIR DESIGNATED CRITICAL HABITAT.

If either the proposed site or the path of stormwater from the site to the receiving stream is in a parish included on the Endangered Species List, the applicant should proceed to Step 2 below. If, however, neither is located in a listed parish, then the applicant should enter “no” in Section I.D.3 of the NOI, and move on to the next item.

If no species are listed in the site’s parish or if a facility’s parish is not found on the list, the applicant is eligible for permit coverage and may indicate in the Notice of Intent that no species are found in the project area and certify that it is eligible for permit coverage by marking “No” on the NOI. Where a project is located in more than one parish, the lists for all parishes shall be reviewed.

STEP 2: DETERMINE IF ANY SPECIES MAY BE FOUND "IN PROXIMITY" TO THE CONSTRUCTION ACTIVITY'S STORM WATER DISCHARGES:

A species is in proximity to a construction activity's storm water discharge when the species is:

- Located in the path or immediate area through which or over which contaminated point source storm water flows from construction activities to the point of discharge into the receiving water; or

- Located in the immediate vicinity of, or nearby, the point of discharge into receiving waters; or

- Located in the area of a site where storm water BMPs are planned or are to be constructed.

The area in proximity to be searched/surveyed for listed species will vary with the size and structure of the construction activity, the nature and quantity of the storm water discharges, and the type of receiving waters. Given the number of construction activities potentially covered by the permit, no specific method to determine whether species are in proximity is required for permit coverage. Instead, operators should use the method or methods which best allow them to determine to the best of their knowledge whether species are in proximity to their particular construction activities. These methods may include:

- Conducting visual inspections: This method may be particularly suitable for construction sites that are smaller in size or located in non-natural settings such as highly urbanized areas or industrial parks where there is little or no natural habitat, or for construction activities that discharge directly into municipal storm water collection systems.

- Contacting the nearest State or Tribal Wildlife Agency or U.S. Fish and Wildlife Service (FWS) offices. Many endangered and threatened species are found in well-defined areas or habitats. That information is frequently known to State, Tribal, or Federal wildlife agencies.

- Contacting local/regional conservation groups. These groups inventory species and their locations and maintain lists of sightings and habitats.

- Conducting a formal biological survey. Larger construction sites with extensive storm water discharges may choose to conduct biological surveys as the most effective way to assess whether species are located in proximity and whether there are likely adverse effects.

- Conducting an Environmental Assessment Under the National Environmental Policy Act (NEPA). Some construction activities may require environmental assessments under NEPA. Such assessments may indicate if listed species are in proximity. (Construction General Permit coverage does not trigger NEPA because it does not regulate any dischargers subject to New Source Performance Standards under Section 306 of the Clean Water Act. See CWA 511(c). However, some construction activities might require review under NEPA because of Federal funding or other Federal nexus.)

If no species are in proximity, an operator is eligible for Construction General Permit coverage under Permit Part I.A.3.E.(1)(a).

If listed species are found in proximity to a facility, operators must indicate the location and nature of this presence in the storm water pollution prevention plan and follow step 3 below.

STEP 3: DETERMINE IF SPECIES OR CRITICAL HABITAT COULD BE ADVERSELY AFFECTED BY THE CONSTRUCTION ACTIVITY'S STORM WATER DISCHARGES OR BY BMPs TO CONTROL THOSE DISCHARGES.

Scope of Adverse Effects: Potential adverse effects from storm water include:

- Hydrological. Storm water may cause siltation, sedimentation or induce other changes in the receiving waters such as temperature, salinity or pH. These effects will vary with the amount of storm water discharged and the volume and condition of the receiving water. Where a storm water discharge constitutes a minute portion of the total volume of the receiving water, adverse hydrological effects are less likely.

- Habitat. Storm water may drain or inundate listed species habitat.

- Toxicity. In some cases, pollutants in storm water may have toxic effects on listed species.

The scope of effects to consider will vary with each site. Operators must also consider the likelihood of adverse effects on species from any BMPs to control storm water. Most adverse impacts from BMPs are likely to occur from the construction activities. However, it is possible that the operation of some BMPs (for example, larger storm water retention ponds) may affect endangered and threatened species.

If adverse effects are determined to be not likely, then the operator is eligible for permit coverage under Part I.A.3.e(1)(a).

If adverse effects are likely, operators should follow step 4 below.

STEP 4: DETERMINE IF MEASURES CAN BE IMPLEMENTED TO AVOID ANY ADVERSE EFFECTS:

If an operator determines that adverse effects cannot be ruled out or are likely, it can receive coverage if appropriate measures are undertaken to avoid or eliminate any actual or potential adverse effects prior to applying for permit coverage. These measures may involve relatively simple changes to construction activities such as re-routing a storm water discharge to bypass an area where species are located, relocating BMPs, or limiting the size of construction activity that will be subject to storm water discharge controls.

At this stage, operators must contact the FWS (or the National Marine Fisheries Service if referred to that Service by FWS) to see what appropriate measures might be suitable to avoid or eliminate adverse impacts to listed species and/or critical habitat. (See 50 CFR 402.13(b)). This can entail the initiation of informal consultation with the FWS (and/or NMFS, if appropriate) which is described in more detail below at step 5.

If operators adopt measures to avoid or eliminate adverse effects, they must continue to abide by them during the course of permit coverage. These measures must be described in the storm water pollution prevention plan and may be enforceable as permit conditions.

If appropriate measures to avoid the likelihood of adverse effects are not available to the operator, the operator should follow step 5 below.

STEP 5: DETERMINE IF THE ELIGIBILITY REQUIREMENTS OF PART I.A.3.E.(1)(b)-(e) CAN BE MET.

Where adverse effects are likely, the operator must contact FWS. Operators may still be eligible for permit coverage if any likelihood of adverse effects is addressed through meeting the criteria of Part I.A.3.e.(1)(b)-(e) of the permit if:

- I.A.3.e.(1)(b). The operator's activity has received previous authorization through an earlier Section 7 consultation or issuance of a Endangered Species Act (ESA) Section 10 permit (incidental taking permit) and that authorization addressed storm water discharges and/or BMPs to control storm water runoff (e.g., developer included impact of entire project in consultation over a wetlands dredge and fill permit under Section 7 of the ESA).

OR

- I.A.3.e.(1)(c). The operator's activity was previously considered as part of a larger, more comprehensive assessment of impacts on endangered and threatened species and /or critical habitat under Section 7 or Section 10 of the Endangered Species Act which accounts for storm water discharges and BMPs to control storm water runoff (e.g., where an area-wide habitat conservation plan and Section 10 permit is issued which addresses impacts from construction activities including those from storm water or a NEPA review is conducted which incorporates ESA Section 7 procedures).

OR

- I.A.3.e.(1)(d). Consultation with the FWS (or NMFS, if appropriate) for the operator's storm water discharges and BMPs to control storm water runoff results in either: 1) FWS/NMFS written concurrence with a finding of no likelihood of adverse effects (see 50 CFR 402.13) or 2) issuance of a biological opinion in which FWS (or NMFS) finds that the action is not likely to jeopardize the continued existence of listed endangered or threatened species or result in the adverse modification or destruction of critical habitat (see 50 CFR 403.14(h)).

  Any terms and conditions developed through consultations to protect listed species and critical habitat must be incorporated into the pollution prevention plan. As noted above, operators must initiate consultation during Step 4 above (upon becoming aware that endangered and threatened species are in proximity to the facility).

OR

- I.A.3.e.(1)(e). The operator's activity was considered as part of a larger, more comprehensive site-specific assessment of impacts on endangered and threatened species by the owner or other operator of the site when it developed a SWPPP and that permittee met the eligibility requirements stated in items I.A.3.e.(1)(a), (b), (c), or (d) of the permit (e.g., owner was able to determine there would be no adverse impacts for the project as a whole under item (a), so contractor meets the eligibility requirements stated in item (e)). Utility companies applying for area-wide permit coverage meet the eligibility requirements stated in item (e) since authorization to discharge is contingent on a principal operator of a construction project having been granted coverage under this, or an alternative LPDES permit for the areas of the site where utilities installation activities will occur.

The determination of eligibility under the conditions of permit Parts I.A.3.e.(1) (b)-(e) shall be documented in the facility's SWPPP and copies of all applicable documents, such as FWS approval letters, included in the SWPPP. The operator must comply with any terms and conditions imposed under the eligibility requirements of permit Parts I.A.3.e.(1)(a), (b), (c), (d), (e) to ensure that storm water discharges or BMPs to control storm water runoff are protective of listed endangered and threatened species and/or critical habitat. Such terms and conditions must be incorporated in the operator's storm water pollution prevention plan.

If the eligibility requirements of Part I.A.3.e.(1)(a)-(e) cannot be met then the operator may not receive coverage under this permit. Operators should then consider applying to LDEQ for an individual permit.

This permit does not authorize any taking (as defined under Section 9 of the Endangered Species Act) of endangered or threatened species unless such takes are authorized under Sections 7 or 10 of the Endangered Species Act. Operators who believe their construction activities may result in takes of listed endangered and threatened species should be sure to get the necessary coverage for such takes through an individual consultation or Section 10 permit.

This permit does not authorize any storm water discharges or BMPs to control storm water runoff that are likely to jeopardize the continued existence of any species that are listed as endangered or threatened under the Endangered Species Act or result in the adverse modification or destruction of designated critical habitat.

II. ENDANGERED SPECIES PARISH LIST

See http://www.deq.louisiana.gov/portal/. Click on Info About **Water**, then "LPDES Permits, Information, . . ." under **Permits**, then "Current Endangered Species Listing" under **Other LPDES Documents**.

APPENDIX B
HISTORIC PROPERTIES GUIDANCE

Operators must determine whether their facility's industrial storm water discharge, or the construction of best management practices (BMPs) to control such discharge, have potential to affect a property that is either listed or eligible for listing on the National Register of Historic Places.

For existing dischargers who do not need to construct BMPs for permit coverage, a simple visual inspection may be sufficient to determine whether historic properties are affected. However, for facilities which are new industrial storm water dischargers, and for existing facilities which are planning to construct BMPs for permit eligibility, operators should conduct further inquiry to determine whether historic properties may be affected by the storm water discharge or BMPs to control the discharge. In such instances, operators should first determine whether there are any historic properties or places in the vicinity that are listed on the National Register, or if any are eligible for listing on the register (e.g., they are "eligible for listing").

Due to the large number of entities seeking coverage under this permit and the limited number of personnel available to the State Historic Preservation Officer to respond to inquiries concerning the location of historic properties, it is suggested that operators first access the "National Register of Historic Places" information listed on the National Park Service's web page at the address listed below. The address for the Louisiana State Historic Preservation Officer is also listed below. Operators may also contact city, parish or other local historical societies for assistance, especially when determining if a place or property is eligible for listing on the register.

The following scenarios describe how operators can meet the permit eligibility criteria for protection of historic properties under this permit:

(1) If historic properties are **not identified** in the path of a facility's industrial storm water discharge, or where construction activities are planned to install BMPs to control such discharges (e.g., diversion channels or retention ponds), or

if historic properties **are identified,** but it is determined that they will **not be affected** by the discharge, or construction of BMPs to control the discharge,

then the operator has met the permit eligibility criteria under Part I.A.3.f.

(2) If historic properties **are identified** in the path of a facility's industrial storm water discharge, or where construction activities are planned for the installation of BMPs to control such discharges, and it is determined that **there is the potential** to adversely affect the property, the operator can still meet the permit eligibility criteria if he/she obtains and complies with a written agreement with the State Historic Preservation Officer, which outlines measures that the operator will follow to mitigate or prevent those adverse effects. The contents of such a written agreement must be included in the facility's storm water pollution prevention plan.

In situations where an agreement cannot be reached between an applicant and the State Historic Preservation Officer, applicants should contact the Advisory Council on Historic Preservation listed below in this addendum for assistance.

The term "adverse effects" includes, but is not limited to, damage, deterioration, alteration, or destruction of the historic property or place. LDEQ encourages operators to contact the appropriate State or Tribal Historic Preservation Officer as soon as possible in the event of a potential adverse effect to a historic property.

Operators are reminded that they must comply with all applicable State and local laws concerning the protection of historic properties and places.

I. Internet Information on the National Register of Historic Places

An electronic listing of the "National Register of Historic Places," as maintained by the National Park Service on its National Register Information System (NRIS), can be accessed on the Internet at http://www.nps.gov/history/nr/research/nris.htm.

II. Louisiana State Historic Preservation Officer (SHPO)

Louisiana, SHPO, Office of Cultural Development, P.O. Box 44247, Baton Rouge, LA 70804-4247. For questions contact the Section 106 Review Coordinator, Telephone: (225) 342-8170.

III. Louisiana Tribes and Their Historic Preservation Officers

For questions related to identifying and protecting tribal cultural resources, operators should contact tribal leaders. A list of Louisiana Tribes and Their Historic Preservation Officers can be found at http://www.crt.state.la.us/archaeology/homepage/NatAmContacts.doc. LDEQ does not have the authority to issue LPDES permits for activities on federal Native American lands.

APPENDIX C
Outstanding Natural Resource Waters

ATCHAFALAYA RIVER BASIN:

None

BARATARIA BASIN:

Bayou Des Allemands – from Lac Des Allemands to old US 90
Bayou Des Allemands – from Hwy. 90 to Lake Salvador

CALCASIEU RIVER BASIN:

Calcasieu River – from LA Highway 8 to the Rapides/Allen Parish line
Calcasieu River – from Rapides-Allen Parish line to Marsh Bayou
Calcasieu River – from Marsh Bayou to saltwater barrier

Whiskey Chitto Creek – from the southern boundary of Fort Polk Military Reservation to the Calcasieu River

Six Mile Creek – East and West Forks from the southern boundary of Fort Polk Military Reservation to Whiskey Chitto Creek

Ten Mile Creek – from headwaters to Whiskey Chitto Creek

LAKE PONTCHARTRAIN BASIN:

Comite River – from Wilson-Clinton Highway to entrance of White Bayou
Amite River – from Mississippi State Line to LA Highway 37
Blind River – from the Amite River Diversion Canal to the mouth at Lake Maurepas
Blind River – from headwaters to Amite River Diversion Canal
Tickfaw River – from the Mississippi State Line to LA Highway 42
Tangipahoa River – from the Mississippi State Line to I-12
Chappepeela Creek – from Louisiana Highway 1062 to Tangipahoa River
Tchefuncte River – from headwaters to Bogue Falaya River, includes tributaries
Lower Tchefuncte River – from Bogue Falaya River to LA Highway 22
Bogue Falaya River – from headwaters to Tchefuncte River
Bayou Lacombe – from the headwaters to U.S. Highway 190
Bayou Lacombe – from U.S. Highway 190 to Lake Pontchartrain
Bayou Cane – from the headwaters to U.S. Highway 190
Bayou Cane – from U.S. Highway 190 to Lake Pontchartrain
Bayou Labranche – from headwaters to Lake Pontchartrain
Bayou Trepagnier – from Norco to Bayou Labranche
Bayou St. John
Bayou Chaperon
Bashman Bayou – from headwaters to Bayou Dupre
Bayou Dupre – from Lake Borgne Canal to Terre Beau Bayou
Lake Borgne Canal – from the Mississippi River siphon at Violet to Bayou Dupre; also called Violet Canal

Pirogue Bayou – from Bayou Dupre to New Canal
Terre Beau Bayou – from Bayou Dupre to New Canal
Bayou Bienvenue – from Bayou Villere to Lake Borgne

MERMENTAU RIVER BASIN:

None

VERMILION-TECHE RIVER BASIN:

Spring Creek – from headwaters to Cocodrie Lake
Bayou Cocodrie – from U.S. Highway 167 to the Bayou Boeuf-Cocodrie Diversion Canal

MISSISSIPPI RIVER BASIN:

None

OUACHITA RIVER BASIN:

Bayou Bartholomew – from Arkansas State Line to Ouachita River
Bayou de L'Outre – from the Arkansas State Line to the Ouachita River
Bayou D'Arbonne – from Bayou D'Arbonne Lake to the Ouachita River
Corney Bayou – from the Arkansas State Line to Corney Lake
Corney Bayou – from Corney Lake to Bayou D'Arbonne Lake
Middle Fork of Bayou D'Arbonne – from headwaters to Bayou D'Arbonne Lake
Little River – from Bear Creek to Catahoula Lake
Fish Creek – from headwaters to Little River
Trout Creek – from headwaters to Little River
Big Creek – from the headwaters to Little River

PEARL RIVER BASIN:

Holmes Bayou – from Pearl River to West Pearl River
West Pearl River – from headwaters to Holmes Bayou
West Pearl River – from Holmes Bayou to The Rigolets; includes the east and west mouths)
Morgan River – from Porters River to West Pearl River
Wilson Slough – from Bogue Chitto to West Pearl River
Bradley Slough - from Bogue Chitto to West Pearl River
Pushepatapa Creek – from headwaters and tributaries at Mississippi State Line to Pearl River flood plain
Bogue Chitto River – from Mississippi State Line to Pearl River Navigation Canal

RED RIVER BASIN:

Bayou Dorcheat – from Arkansas State Line to Lake Bistineau
Black Lake Bayou – from one mile north of Leatherman Creek to Black Lake
Saline Bayou – from headwaters near Arcadia to Saline Lake
Kisatchie Bayou – from its Kisatchie National Forest to Old River
Saline Bayou – from Larto Lake to Saline Lake
Bayou Cocodrie – from Little Cross Bayou to Wild Cow Bayou

SABINE RIVER BASIN:

Pearl Creek – from headwaters to Sabine River

TERREBONNE BASIN:

Bayou Penchant – from Bayou Chene to Lake Penchant

ADDENDUM C

NOTICE OF TERMINATION (NOT) FORM

STATE OF LOUISIANA
DEPARTMENT OF ENVIRONMENTAL QUALITY
Office of Environmental Services, Water Permits Division
Post Office Box 4313
Baton Rouge, Louisiana 70821-4313
PHONE#: (225) 219-3181

LPDES NOTICE OF TERMINATION OF COVERAGE UNDER LPDES GENERAL PERMIT FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES FIVE ACRES OR MORE (LAR100000)

I. PERMIT INFORMATION

Facility's Storm Water Authorization Number LAR10_____ AI #:_____

_____ Check here if you are no longer the Operator of the Facility OR if the facility has been sold

_____ Check here if the storm water discharge associated with the construction activity is Being Terminated

II. FACILITY OPERATOR INFORMATION

Name: _____

Mail Address: _____

City: _____

State: _____ Zip Code: _____ Phone: _____

III. FACILITY/SITE LOCATION INFORMATION

Name of Project: _____

Location of Project: _____

City: _____ State: _____ Zip Code: _____

Parish _____

IV. CERTIFICATION

I certify under penalty of law that all storm water discharges associated with construction activity from the portion of the identified facility where I was an operator have ceased or have been eliminated or that I am no longer an operator at the construction site. I understand that by submitting this Notice of Termination, I am no longer authorized to discharge storm water associated with construction activity under this general permit, and that discharging pollutants in storm water associated with construction activity to waters of the State is unlawful under the Clean Water Act where the discharge is not authorized by an LPDES permit. I also understand that the submittal of this Notice of Termination does not release an operator from liability for any violation of this permit or the Clean Water Act.

Print Name: _____ Date: _____

Signature: _____

ADDENDUM D

HISTORIC PRESERVATION

HISTORIC PROPERTIES GUIDANCE

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if historic properties **are identified,** but it is determined that they will **not be affected** by the discharge, or construction of BMPs to control the discharge,

then the operator has met the permit eligibility criteria under Part I.A.3.f.

(2) If historic properties **are identified** in the path of a facility's industrial storm water discharge, or where construction activities are planned for the installation of BMPs to control such discharges, and it is determined that **there is the potential** to adversely affect the property, the operator can still meet the permit eligibility criteria if he/she obtains and complies with a written agreement with the State Historic Preservation Officer, which outlines measures that the operator will follow to mitigate or prevent those adverse effects. The contents of such a written agreement must be included in the facility's storm water pollution prevention plan.

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ADDENDUM E

LIST OF ADDRESSES FOR LDEQ OFFICES

CURRENT ADDRESSES

Enforcement Division
Office of Environmental Compliance
Department of Environmental Quality
P. O. Box 4312
Baton Rouge, Louisiana 70821-4312
Telephone: (225) 219-3715

Mailing Addresses For Regional Offices	Jurisdictional Parishes For Each Regional Office
Acadiana Regional Office Surveillance Division Office of Environmental Compliance 111 New Center Drive Lafayette, Louisiana 70508 (337) 262-5584	Acadia, Evangeline, Iberia (west of the Atchafalaya River), Lafayette, St. Landry, St. Martin (west of the Atchafalaya River), St. Mary, Vermilion
Capital Regional Office Surveillance Division Office of Environmental Compliance P.O. Box 4312 Baton Rouge, Louisiana 70821-4312 (225) 219-3600	Ascension, Assumption, East Baton Rouge, East Feliciana, Iberia (East of the Atchafalaya River), Iberville, Livingston, Pointe Coupee, St. Helena, St. James, St. Martin (East of the Atchafalaya River), Tangipahoa, West Baton Rouge, West Feliciana
Northeast Regional Office Surveillance Division Office of Environmental Compliance 1823 Highway 546 West Monroe, Louisiana 71292 (318) 362-5439	Avoyelles, Caldwell, Catahoula, Concordia, East Carroll, Franklin, Grant, Jackson, La Salle, Lincoln, Madison, Morehouse, Ouachita, Rapides, Richland, Tensas, Union, West Carroll, Winn
Northwest Regional Office Surveillance Division Office of Environmental Compliance 1525 Fairfield Avenue, Room 520 Shreveport, Louisiana 71130 (318) 676-7476	Bienville, Bossier, Caddo, Claiborne, De Soto, Natchitoches, Red River, Sabine, Webster
Southeast Regional Office Surveillance Division Office of Environmental Compliance 201 Evans Road, Bldg. 4, Suite 420 New Orleans, LA 70123-5230 (504) 736-7701	Jefferson, Lafourche, Orleans, Plaquemines, St. Bernard, St. Charles, St. John the Baptist, St. Tammany, Terrebonne, Washington
Southwest Regional Office Surveillance Division Office of Environmental Compliance 1301 Gadwall Street Lake Charles, Louisiana 70615-5176 (337) 491-2667	Allen, Beauregard, Calcasieu, Cameron, Jefferson Davis, Vernon

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DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01 57 23.01 12

TRUCK WASH-DOWN RACKS

PART 1 GENERAL

1.1 SCOPE
1.2 SUBMITTALS
1.3 MEASUREMENT AND PAYMENT

PART 2 PRODUCTS

PART 3 EXECUTION

3.1 Truck Wash-Down Rack

-- End of Section Table of Contents --

SECTION 01 57 23.01 12

TRUCK WASH-DOWN RACKS

PART 1 GENERAL

1.1 SCOPE

The work specified in this section consists of the Contractor designing, implementing and maintaining approved truck wash-down rack(s) at the construction site.

1.2 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. The following shall be submitted in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Truck Wash-Down Rack; G

The Contractor shall submit a work plan to the Contracting Officer. The plan shall include the following information:

a. The dimensions and location of each truck wash down rack.

b. Details depicting the design of each truck wash down rack.

1.3 MEASUREMENT AND PAYMENT

No measurement will be made for the temporary truck wash-down rack designed, constructed and maintained by the Contractor. Payment for the temporary truck wash-down rack, including its maintenance and removal, will be made at the contract lump sum price for "Truck Wash-Down 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 and as shown on drawings.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

3.1 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 the points of egress from the construction site onto Lapalco Blvd. during hauling and construction operations to eliminate mud and debris transported onto public roads. 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 access road 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 32 15 00.00 12 SURFACING (GRANULAR)shall be located between the truck wash-down rack and the locations at Lapalco Blvd.

3. All truck wash-down rack waste water and sediment shall be intercepted before draining offsite. The water shall be returned to the drainage canal and/or the ditch paralleling Lapalco Blvd. and the sediment removed and disposed of on the protected side berm of the levee.

4. Additionally, the Contractor shall station a mechanical street sweeper on site and shall immediately clean Lapalco Blvd. of any debris falling off the washed trucks. The mechanical street sweeper shall be onsite at all times to clean the streets. Any debris that is still present shall be removed with hand tools by the contractor. Failure of the Contractor to comply with these requirements shall result in the Contractor stopping all hauling operations until the streets are cleaned of debris.

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 remain.

-- End of Section --

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DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01 78 02.00 10

CLOSEOUT SUBMITTALS

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1.3.1 As-Built Drawings
1.3.1.1 Government Furnished Materials
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PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

-- End of Section Table of Contents --

SECTION 01 78 02.00 10

CLOSEOUT SUBMITTALS

PART 1 GENERAL

1.1 MEASUREMENT AND PAYMENT

No separate measurement and payment will be made for providing Closeout Submittals, including as-built drawings required under this section. All costs associated therewith shall be included in the applicable unit prices or lump sum prices contained in the Bidding Schedule.

1.2 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. The following shall be submitted in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

As-Built Drawings; G, DO

Drawings showing final as-built conditions of the project. The final CADD as-built drawings shall consist of one set of electronic CADD drawing files in the specified format, one set of mylar drawings, 2 sets of blue-line prints of the mylar's, and one set of the approved working as-built drawings.

SD-03 Product Data

Qualifications of CADD personnel; G, DO

Resume showing experience in the required CADD drafting standards.

1.3 PROJECT RECORD DOCUMENTS

1.3.1 As-Built Drawings

This paragraph covers as-built drawings complete, as a requirement of the contract. The terms "drawings," "contract drawings," "drawing files," "working as-built drawings" and "final as-built drawings" refer to contract drawings which are revised to be used for final as-built drawings.

1.3.1.1 Government Furnished Materials

One set of electronic CADD files in the specified software and format revised to reflect all bid amendments will be provided by the Government at the preconstruction conference for projects requiring CADD file as-built drawings.

1.3.1.2 Working As-Built and Final As-Built Drawings

The Contractor shall revise 2 sets of paper drawings by red-line process to show the as-built conditions during the prosecution of the project. These working as-built marked drawings shall be kept current on a weekly basis and at least one set shall be available on the jobsite at all times. Changes from the contract plans which are made in the work or additional information which might be uncovered in the course of construction shall be accurately and neatly recorded as they occur by means of details and notes. The working as-built marked prints and final as-built drawings will be jointly reviewed for accuracy and completeness by the Contracting Officer and the Contractor prior to submission of each monthly pay estimate. If the Contractor fails to maintain the working and final as-built drawings as specified herein, the Contracting Officer will deduct from the monthly progress payment an amount representing the estimated cost of maintaining the as-built drawings. This monthly deduction will continue until an agreement can be reached between the Contracting Officer and the Contractor regarding the accuracy and completeness of updated drawings. The working and final as-built drawings shall show, but shall not be limited to, the following information:

a. The actual location, kinds and sizes of all sub-surface utility lines. In order that the location of these lines and appurtenances may be determined in the event the surface openings or indicators become covered over or obscured, the as-built drawings shall show, by offset dimensions to two permanently fixed surface features, the end of each run including each change in direction. Valves, splice boxes and similar appurtenances shall be located by dimensioning along the utility run from a reference point. The average depth below the surface of each run shall also be recorded.

b. The location and dimensions of any changes within the building structure.

c. Correct grade, elevations, cross section, or alignment of roads, earthwork, structures or utilities if any changes were made from contract plans.

d. Changes in details of design or additional information obtained from working drawings specified to be prepared and/or furnished by the Contractor; including but not limited to fabrication, erection, installation plans and placing details, pipe sizes, insulation material, dimensions of equipment foundations, etc.

e. The topography, invert elevations and grades of drainage installed or affected as part of the project construction.

f. Changes or modifications which result from the final inspection.

g. Where contract drawings or specifications present options, only the option selected for construction shall be shown on the final as-built prints.

h. If borrow material for this project is from sources on Government property, or if Government property is used as a spoil area, the Contractor shall furnish a contour map of the final borrow pit/spoil area elevations.

i. Systems designed or enhanced by the Contractor, such as HVAC controls, fire alarm, fire sprinkler, and irrigation systems.

j. Modifications will be shown in accordance with the following procedures.

(1) Directions in the modification for posting descriptive changes shall be followed.

(2) A Modification Triangle shall be placed at the location of each deletion.

(3) For new details or sections which are added to a drawing, a Modification Triangle shall be placed by the detail or section title.

(4) For minor changes, a Modification Triangle shall be placed by the area changed on the drawing (each location).

(5) For major changes to a drawing, a Modification Triangle shall be placed by the title of the affected plan, section, or detail at each location.

(6) For changes to schedules or drawings, a Modification Triangle shall be placed either by the schedule heading or by the change in the schedule.

(7) The Modification Triangle size shall be 1/2 inch on a side unless the area where the circle is to be placed is crowded. Smaller size circle shall be used for crowded areas.

1.3.1.3 Drawing Preparation

The as-built drawings shall be modified as may be necessary to correctly show the features of the project as it has been constructed by bringing the contract set into agreement with approved working as-built prints, and adding such additional drawings as may be necessary. These working as-built marked prints shall be neat, legible and accurate. These drawings are part of the permanent records of this project and shall be returned to the Contracting Officer after approval by the Government. Any drawings damaged or lost by the Contractor shall be satisfactorily replaced by the Contractor at no expense to the Government.

1.3.1.4 Qualifications of CADD personnel

Only personnel proficient in the preparation of CADD drawings shall be employed to modify the contract drawings or prepare additional new drawings. The contractor shall submit the qualifications of the personnel who will prepare the CADD drawings for approval. The Contractor shall comply with the A/E/C CADD Standard requirements included on the electronic bid set CD for all drawing modifications.

1.3.1.5 Computer Aided Design and Drafting (CADD) Drawings

Additions and corrections to the contract drawings shall be equal in quality and detail to that of the originals. Line colors, line weights, lettering, layering conventions, and symbols shall be the same as the original line colors, line weights, lettering, layering conventions, and symbols. If additional drawings are required, they shall be prepared using the specified electronic file format applying the same graphic standards specified for original drawings. The title block and drawing border to be used for any new final as-built drawings shall be identical to that used on

the contract drawings. Additions and corrections to the contract drawings shall be accomplished using CADD files. The Contractor will be furnished "as-designed" drawings in Microstation V8 format compatible with a Windows XP operating system. The electronic files will be supplied on compact disc, read-only memory (CD-ROM). The Contractor shall be responsible for providing all program files and hardware necessary to prepare final as-built drawings. The Contracting Officer will review final as-built drawings for accuracy and the Contractor shall make required corrections, changes, additions, and deletions.

a. CADD colors shall be the "base" colors of red, green, and blue. Color code for changes shall be as follows:

(1) Deletions (red) - Deleted graphic items (lines) shall be colored red with red lettering in notes and leaders.

(2) Additions (Green) - Added items shall be drawn in green with green lettering in notes and leaders.

(3) Special (Blue) - Items requiring special information, coordination, or special detailing or detailing notes shall be in blue.

b. The Contract Drawing files shall be renamed in a manner related to the contract number (i.e., 98-C-10.DGN) as instructed in the Pre-Construction conference. Marked-up changes shall be made only to those renamed files. All changes shall be made on the layer/level as the original item. There shall be no deletions of existing lines; existing lines shall be over struck in red. Additions shall be in green with line weights the same as the drawing. Special notes shall be in blue on layer "?-ANNO-NOTE" where "?" represents the discipline designator (for example; "C" for Civil, "E" for electrical, "S" for Structural, etc.).

c. When final revisions have been completed, the cover sheet drawing shall show the wording "RECORD DRAWING AS-BUILT" followed by the name of the Contractor in letters at least 3/16 inch high. All other contract drawings shall be marked either "AS-Built" drawing denoting no revisions on the sheet or "Revised As-Built" denoting one or more revisions. Original contract drawings shall be dated in the revision block.

d. Within 20 days after Government approval of all of the working as-built drawings, the Contractor shall prepare the final CADD as-built drawings for that phase of work and submit two sets of blue-lined prints of these drawings for Government review and approval. The Government will promptly return one set of prints annotated with any necessary corrections. Within 10 days the Contractor shall revise the CADD files accordingly at no additional cost and submit one set of final prints for the completed phase of work to the Government. Within 10 day of substantial completion of all phases of work, the Contractor shall submit the final as-built drawing package for the entire project. The submittal shall consist of one set of electronic files on compact disc, read-only memory (CD-ROM), one set of mylars, two sets of blue-line prints and one set of the approved working as-built drawings. They shall be complete in all details and identical in form and function to the contract drawing files supplied by the Government. Any transactions or adjustments necessary to accomplish this is the responsibility of the Contractor. The Government reserves the right to reject any drawing files it deems incompatible with the customer's CADD system. Paper prints, drawing files and storage media submitted will become the property of the Government upon

final approval. Failure to submit final as-built drawing files and marked prints as specified shall be cause for withholding any payment due the Contractor under this contract. Approval and acceptance of final as-built drawings shall be accomplished before final payment is made to the Contractor.

1.4 FINAL CLEANING

The premises shall be left clean. The site shall have waste, surplus materials, and rubbish removed. The project area shall have temporary structures, barricades, project signs, and construction facilities removed.

PART 2 PRODUCTS (NOT USED)

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SECTION 02 41 00

DEMOLITION

PART 1 GENERAL

The work covered by this section consists of furnishing all equipment, material and labor required to perform all operations necessary for demolition of floodwall by cutting vinyl sheetpile below ground surface in the vicinity of Sta. 57+80 C/L; cutting steel sheetpile below ground surface; and removal of all concrete armor protection in the vicinity of Sta. 182+50 C/L, as specified herein and according to the contract drawings. Demolition and removal from job site shall include the concrete armor protection on the levee slopes and the removal by cutting of the existing steel and vinyl sheetpile walls to the elevations specified on the drawings.

1.1 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.

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI A10.6	(1990; R 1998) Safety Requirements for Demolition Operations

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1	(2008) Safety -- Safety and Health Requirements

1.2 GENERAL REQUIREMENTS

The removal of the existing floodwalls shall not be conducted during hurricane protection season. The work includes demolition and removal from project all resulting concrete rubbish and debris. Remove rubbish and debris from job site shall be conducted daily, unless otherwise directed. In the interest of occupational safety and health, perform the work in accordance with EM 385-1-1, Section 23, Demolition, and other applicable Sections.

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. The following shall be submitted in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Demolition Plan; G, RO
Notifications; G

Proposed demolition, and removal procedures for approval before work is started.

1.4 MEASUREMENT AND PAYMENT

1.4.1 Demolition

No measurement will be made for demolition required by this section. Payment will be made at the contract lump sum price for "Demolition". Price and payment shall constitute full compensation for the work required by this section and shall include the furnishing of all plant, equipment, labor and materials required to complete this item as described herein and as shown on the plans.

1.5 REGULATORY AND SAFETY REQUIREMENTS

Comply with federal, state, and local hauling and disposal regulations. In addition to the requirements of the "Contract Clauses," conform to the safety requirements contained in ANSI A10.6.

1.5.1 Notifications

1.5.1.1 General Requirements

Furnish timely notification of demolition projects to Federal, State, regional, and local authorities. Notify the State's environmental protection agency and the Contracting Officer in writing 10 working days prior to the commencement of work.

1.5.2 Receipts

The Contractor shall submit copies of all licenses, certifications, notifications, and receipts required or issued for the equipment, methods of disposal, and areas used for disposal of removed materials. The Contractor shall note special attention for any receipt or bill of lading for all hazardous or potentially hazardous materials removed from the work site.

1.6 EXISTING CONDITIONS DOCUMENTATION

Before beginning any demolition or deconstruction work, survey the site and examine the drawings and specifications to determine the extent of the work. Record existing conditions in the presence of the Contracting Officer showing the condition of structures and other facilities adjacent to areas of alteration or removal. Photographs sized 4 inch will be acceptable as a record of existing conditions. Include in the record the elevation of the top of foundation walls, finish ground elevations, possible conflicting electrical conduits, plumbing lines, the location and extent of existing cracks and other damage and description of surface conditions that exist prior to starting work. It is the Contractor's responsibility to verify and document all required outages which will be required during the course of work, and to note these outages on the record document.

1.7 REQUIRED DATA

Prepare and submit a detailed Demolition Plan 30 days prior to commencing demolition work. Include in the plan: tools, equipment, and procedures necessary for careful removal and disposition of materials specified to be

demolished. The submittal shall include general layout drawings, equipment specifications, and all work platforms necessary for safe demolition and removal or recycle of demolished and deconstructed materials. The Contractor shall provide a schedule showing coordination with other work in progress and Waste Management Plan. Provide procedures for safe conduct of the work in accordance with EM 385-1-1. Demolition Plan shall be approved by Contracting Officer prior commencement of work.

1.7.1 Plan and Procedures

The Contractor shall submit his plan to the Contracting Officer for approval. The plan shall include procedures to accomplish the following:

1) Schedule for completion of all demolition work included in the specifications and shown on the drawings.

2) Plans for dismantling, removing and disposing of the existing structures.

3) Methods of storage or disposal.

4) Proposals for control of environmental pollution.

5) Safety precautions to protect personnel and property.

6) All other associated work.

1.8 EXISTING CONSTRUCTION LIMITS AND PROTECTION

Do not disturb existing construction beyond the extent indicated or necessary for installation of new construction. Provide protective measures to control accumulation and migration of dust and dirt in all work areas. Remove debris from work areas daily.

1.9 WEATHER PROTECTION

Contractor must coordinate demolition with flood protection and emergency closure plans. Flood protection offered by the pumping station or area hurricane protection shall not be compromised as a result of demolition. Any demolition that requires an infringement upon existing levels of flood protection must have a plan to maintain existing flood protection. This plan must be pre-approved by the Contracting Officer before mobilization for demolition.

1.10 PROTECTION OF PERSONNEL

Before, during and after the demolition and deconstruction work the Contractor shall continuously evaluate the condition of the structure being demolished and deconstructed and take immediate action to protect all personnel working in and around the project site. No area, section, or component will be allowed to be left standing without sufficient bracing, shoring, or lateral support to prevent collapse or failure while workmen remove debris or perform other work in the immediate area.

1.11 BURNING

The use of burning at the project site for the disposal of refuse and debris will not be permitted.

1.12 DUST AND DEBRIS CONTROL

Prevent the spread of dust and debris to avoid the creation of a nuisance or hazard in the surrounding area. Do not use excessive water if it results in hazardous or objectionable conditions such as, but not limited to flooding, erosion, or pollution.

1.13 ENVIRONMENTAL PROTECTION

Comply with the Environmental Protection Agency requirements specified.

1.14 USE OF EXPLOSIVES

Use of explosives will not be permitted.

PART 2 PRODUCTS

2.1 FILL MATERIAL

All fill material shall be in accordance with Section 31 23 00.00 12 EMBANKMENT, paragraph Compacted Fill.

PART 3 EXECUTION

3.1 SHEETPILE REMOVAL

The Contractor shall cut off and remove the top portion of the existing vinyl sheetpile wall and the (Option Area - A) steel sheetpile wall as indicated on the drawings. The vinyl sheetpile shall only be removed by saw-cut methods, burning will not be permitted, a cutting torch may be utilized for removing the steel sheetpile. All cut sheetpile shall be removed from the job site by the Contractor at no additional cost to the Government.

3.2 REMOVAL OF ARMOR PROTECTION SLAB

The Contrator shall remove all of the existing concrete armor protection slabs (Option Area - A) as indicated on the drawings. All removed concrete slabs and associated debris shall be removed from the job site at no additional cost to the Government.

3.3 DISPOSITION OF MATERIAL

3.3.1 Disposal of Materials

All materials removed and not reused, shall become the property of the Contractor and shall be removed from the work site. Such disposal shall comply with all applicable Federal, State, and Local laws. The Contractor shall, at his/her option, either retain for his/her own use or dispose of by sale or otherwise, such materials of value. The Contractor is urged to salvage items and material to the maximum extent possible. The Government is not responsible for the protection and safekeeping of any materials retained by the Contractor. Such materials shall be removed from the site of the work before the date of completion of the work.

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SECTION 03 11 14.00 12

FORMWORK FOR CONCRETE

PART 1 GENERAL

1.1 SCOPE

The work covered by this section consists of furnishing all materials and equipment and performing all labor for the forming of concrete in the structures included in these specifications.

1.2 RELATED WORK SPECIFIED ELSEWHERE

a. Section 03 31 00.00 12 CAST-IN-PLACE STRUCTURAL CONCRETE.

b. Section 03 21 00.00 12 REINFORCING STEEL.

c. Section 03 15 13.00 12 EXPANSION JOINTS AND WATERSTOPS IN CONCRETE.

d. Section 01 45 04.00 12 CONTRACTOR QUALITY CONTROL.

1.3 REFERENCES

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

ACI INTERNATIONAL (ACI)

ACI 347	(2004) Guide to Formwork for Concrete

ASTM INTERNATIONAL (ASTM)

ASTM C 31/C 31M	(2009) Standard Practice for Making and Curing Concrete Test Specimens in the Field
ASTM C 39/C 39M	(2008) Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens
ASTM C 1077	(2009b) Standard Practice for Laboratories Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Laboratory Evaluation

U.S. DEPARTMENT OF COMMERCE (DOC)

PS 1	(2007) Structural Plywood

1.4 MEASUREMENT AND PAYMENT

No separate measurement or payment will be made for formwork and all costs in connection therewith shall be included in the contract prices for the items of work to which the work is incidental.

1.5 DESIGN REQUIREMENTS

The design, engineering, and construction of the formwork shall be the responsibility of the Contractor. The formwork shall be designed for anticipated live and dead loads and shall comply with the tolerances specified in Section 03 31 00.00 12 CAST-IN-PLACE STRUCTURAL CONCRETE, paragraph CONSTRUCTION TOLERANCES. However, for surfaces with an ACI Class A surface designation, the allowable deflection for facing material between studs, for studs between walers and walers between bracing shall be limited to 0.0025 times the span. The formwork shall be designed as a complete system with consideration given to the effects of cementitious materials and mixture additives such as fly ash, cement type, plasticizers, accelerators, retarders, air entrainment, and others. The adequacy of formwork design and construction shall be monitored prior to and during concrete placement as part of the Contractor's approved Quality Control Plan.

1.6 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. The following shall be submitted in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Shop Drawings

Drawings and design computations for all formwork required shall be submitted at least 45 days either before fabrication on site or before delivery of prefabricated forms. If reshoring is permitted, the method, including location, order, and time of erection and removal shall also be submitted for review.

SD-03 Product Data

Materials

Manufacturer's literature shall be submitted for plywood, concrete form hard board, form accessories, prefabricated forms, and form coating.

SD-05 Design Data

Formwork Not Supporting Weight of Concrete; G, DO

If forms are to be removed in less than 18 hours on formwork not supporting the weight of concrete, the evaluation and results of the control cylinder tests shall be submitted to and approved before the forms are removed.

SD-06 Test Reports

Inspection Reports

The Contractor shall submit field inspection reports for concrete forms and embedded items.

1.7 SHOP DRAWINGS

The shop drawings and data submitted shall include the type, size, quantity, and strength of all materials of which the forms are made, the plan for jointing of facing panels, details affecting the appearance, and the assumed design values and loading conditions.

1.8 QUALITY CONTROL

1.8.1 General

Forms, embedded items, ties and other accessories as specified in paragraph ACCESSORIES shall be inspected in sufficient time prior to each concrete placement by the Contractor in order to certify to the Contracting Officer that they are ready to receive concrete. Inspection of forms for concrete shall include a detailed evaluation of leakage control measures, type and application of release agent, and form cleanliness to avoid dirt transfer to the concrete.

1.8.2 Reporting

The results of each inspection shall be reported in writing and shall include, but not be limited to, the following:

(1) Removal of extraneous material from forms.

(2) Check of joints for mortar tightness.

(3) Type of form material required for the concrete finish.

(4) Falsework and/or bracing.

(5) Alignment, tolerances, and dimensions.

(6) Chamfering.

(7) Form coating.

The original and two copies of these inspection reports, as well as corrective action taken, shall be furnished to the Government daily. The format of these reports shall be as prescribed in Section 01 45 04.00 12 CONTRACTOR QUALITY CONTROL.

PART 2 PRODUCTS

2.1 MATERIALS

2.1.1 Forms

Forms shall be fabricated with facing materials that will produce a finish meeting the specified construction tolerances given in Section 03 31 00.00 12 CAST-IN-PLACE STRUCTURAL CONCRETE. Forms shall be fabricated with facing materials specified.

2.1.1.1 Class "A" Finish

This class of finish shall apply to all exterior formed surfaces not covered by backfill. The form facing material shall be composed of new,

well matched tongue-and-groove lumber or new plywood panels conforming to DOC PS 1, either Grade B-B (Concrete Form) Class I or Grade B-B Density Concrete Form Overlay, Class I. Other form materials or liners may be used provided the smoothness and appearance of concrete produced will be equivalent to that produced by the plywood concrete form panels.

2.1.1.2 Class "D" Finish

This class of finish shall apply to all unexposed surfaces. The form facing may be of wood or steel.

2.1.2 Form Coating

Form coating shall be commercial formulation that will not bond with, stain, cause deterioration, or any other damage to concrete surfaces. The coating shall not impair subsequent treatment of concrete surfaces depending upon bond or adhesion nor impede the wetting of surfaces to be cured with water or curing compounds.

2.2 ACCESSORIES

Ties and other similar form accessories to be partially or wholly embedded in the concrete shall be of a commercially manufactured type. After the ends or end fasteners have been removed, the embedded portion of metal ties shall terminate not less than 2 inches from any concrete surface either exposed to view or exposed to water. Removable tie rods shall not be allowed. Plastic snap ties may be used in locations where the surface will not be exposed to view. Form ties shall be constructed so that the ends or end fasteners can be removed without spalling the concrete. Safety factors for form ties, anchors and hangers shall comply with the standards of ACI 347, Table 2.3. The use of tapered ties is not allowed.

PART 3 EXECUTION

3.1 INSTALLATION

3.1.1 Form Construction

Forms shall be constructed true to the structural design and required alignment. The form surface and joints shall be mortar tight and supported to achieve safe performance during construction, concrete placement, and form removal. The Contractor shall continuously monitor the alignment and stability of the forms during all phases to assure the finished product will meet the required surface class or classes specified in paragraph FORMS and tolerances specified in paragraph DESIGN REQUIREMENTS. Failure of any supporting surface either due to surface texture, deflection or from collapse shall be the responsibility of the Contractor as will the replacement or correction of unsatisfactory surfaces. When forms for continuous surfaces are placed in successive units, care shall be taken to fit the forms over the completed surface to obtain accurate alignment of the surface and to prevent leakage of mortar. Forms shall not be re-used if there is any evidence of defects which would impair the quality of the resulting concrete surface. All surfaces of used forms shall be cleaned of mortar and any other foreign material before reuse.

3.1.2 Chamfering

All exposed joints, edges and external corners shall be chamfered by molding placed in the forms unless the drawings specifically state that

chamfering is to be omitted or as otherwise specified. Chamfered joints shall not be permitted where earth or rockfill is placed in contact with concrete surfaces. Chamfered joints shall be terminated twelve inches outside the limit of the earth or rockfill so that the end of the chamfers will be clearly visible.

3.1.3 Coating

Forms for exposed or painted surfaces shall be coated with form oil or a form-release agent before the form or reinforcement is placed in final position. The use of waste oil or used oil as a form-release agent or form oil is prohibited. The coating shall be used as recommended in the manufacturer's instructions. Forms for unexposed surfaces may be wet with water in lieu of coating immediately before placing concrete, except that, in cold weather when freezing temperatures are anticipated, coating shall be mandatory. Surplus coating on form surfaces and coating on reinforcing steel and construction joints shall be removed before placing concrete. Coatings that discolor concrete or are incompatible with their concrete materials are prohibited.

3.2 FORM REMOVAL

Forms shall not be removed without approval. The minimal time required for concrete to reach a strength adequate for removal of formwork without risking the safety of workers or the quality of the concrete depends on a number of factors including, but not limited to, ambient temperature, concrete lift heights, type and amount of concrete admixture, and type and amount of cementitious material in the concrete. It is the responsibility of the Contractor to consider all applicable factors and leave the forms in place until it is safe to remove them. In any case forms shall not be removed unless the minimum time, minimum ambient temperature, and minimum compressive strength requirements below are met, except as otherwise directed or specifically authorized. When conditions are such as to justify the requirement, forms will be required to remain in place for a longer period. All removal shall be accomplished in a manner which will prevent damage to the concrete and ensure the complete safety of the structure. Where forms support more than one element, the forms shall not be removed until the form removal criteria are met by all supported elements. Form removal shall be scheduled so that all necessary repairs can be performed as specified in Section 03 31 00.00 12 CAST-IN-PLACE STRUCTURAL CONCRETE, paragraph FORMED SURFACE REPAIR. Evidence that concrete has gained sufficient strength to permit removal of forms shall be determined by tests on control cylinders. All control cylinders shall be stored in the structure or as near the structure as possible so they receive the same curing conditions and protection methods as given those portions of the structure they represent. Control cylinders shall be removed from the molds at an age of no more than 24 hours. All control cylinders shall be prepared and tested in accordance with ASTM C 31/C 31M and ASTM C 39/C 39M at the expense of the Contractor by an independent laboratory that complies with ASTM C 1077 and shall be tested within 4 hours after removal from the site.

3.2.1 Formwork Not Supporting Weight of Concrete

Formwork for walls, columns, sides of beams, gravity structures, and other vertical type formwork not supporting the weight of concrete shall not be removed in less than 18 hours after concrete placement is completed. Form removal before 18 hours will be allowed for simple floor slab on grade, sidewalks, and driveways provided the ambient temperature during this

period has not fallen below 50 degrees F at any time since placement and evidence from compressive tests on field-cured concrete control cylinders indicates that the concrete has attained a compressive strength of at least 500 psi. Control cylinders shall be prepared for each set of forms to be removed before 18 hours. The stability of the concrete shall be evaluated by a structural engineer prior to removal of the forms.

3.2.2 Formwork Supporting Weight of Concrete

Formwork supporting weight of concrete and shoring shall not be removed until structural members have acquired sufficient strength to safely support their own weight and any construction or other superimposed loads to which the supported concrete may be subjected. As a minimum, forms shall be left in place until control concrete test cylinders or maturity instrumentation indicate evidence the concrete has attained at least 70 percent of the specified strength.

3.3 INSPECTION OF CONCRETE PLACEMENT

The Contractor shall place the first monolith in its entirety and remove the formwork as indicated in paragraph FORM REMOVAL prior to placing concrete in any other monolith. The Contractor shall notify the Contracting Officer's Representative immediately after the forms are removed so that an on-site inspection of the concrete work can be made. No patching or repair shall be permitted until after the inspection is made. Curing operations shall not be altered. Recommendations, as a result of the inspection, shall be made part of the Contractor's Quality Control for all future concrete work.

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SECTION 03 15 13.00 12

EXPANSION JOINTS AND WATERSTOPS IN CONCRETE

PART 1 GENERAL

1.1 SCOPE

This section covers the materials, techniques and workmanship requirements for forming expansion joints in concrete.

1.2 RELATED WORK SPECIFIED ELSEWHERE

Major requirements for concrete work are specified in Section 03 31 00.00 12 CAST IN PLACE STRUCTURAL CONCRETE.

1.3 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.

ASTM INTERNATIONAL (ASTM)

ASTM C 920	(2005) Standard Specification for Elastomeric Joint Sealants
ASTM D 1752	(2004a) Standard Specification for Preformed Sponge Rubber Cork and Recycled PVC Expansion
ASTM D 412	(2006ae1e2) Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers - Tension

U.S. ARMY CORPS OF ENGINEERS (USACE)

COE CRD-C 513	(1974) Specifications for Rubber Waterstops
COE CRD-C 572	(1974) Specifications for Polyvinylchloride Waterstops

1.4 MEASUREMENT AND PAYMENT

No separate measurement or payment will be made for expansion joints and waterstops as specified in this section. All costs in connection therewith shall be included in the contract prices for the items to which the work is incidental thereto.

1.5 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. The following shall be

submitted in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Waterstops; G, RO

Shop drawings and fabrication drawings provided by the manufacturer or prepared by the Contractor.

SD-03 Product Data

Preformed Expansion Joint Filler
Sealant
Waterstops

Manufacturer's literature, including safety data sheets, for preformed fillers; field-molded sealants and primers (when required by sealant manufacturer); and waterstops. Manufacturer's recommended instructions for installing preformed fillers, field-molded sealants; and waterstops; and for splicing non-metallic waterstops.

SD-04 Samples

Field-Molded

One gallon of field-molded sealant and one quart of primer (when primer is recommended by the sealant manufacturer) identified to indicate manufacturer, type of material, quantity, and shipment or lot represented.

Non-metallic Material

Waterstop materials and splice samples shall be submitted for inspection and testing and shall be identified to indicate manufacturer, type of material, size and quantity of material and shipment represented. Each material sample shall be a piece not less than 12 inches long cut from each 200 feet of finished waterstop furnished, but not less than a total of four linear feet of each type and size furnished. For spliced segments of waterstops to be installed in the work, one spliced sample of each size and type for every 50 splices made in the factory and every 10 splices made at the job site shall be furnished for inspection and testing. The spliced samples shall be made using straight run pieces with the splice located at the mid-length of the sample and finished as required for the installed waterstop. The total length of each spliced sample shall be not less than 12 inches long.

SD-07 Certificates

Preformed Expansion Joint Filler
Sealant
Waterstops

Certified manufacturer's test reports shall be provided for premolded expansion joint filler strips, sealants, and waterstops to verify compliance with applicable specification.

PART 2 PRODUCTS

2.1 MATERIALS

2.1.1 Preformed Expansion Joint Filler Strips

Preformed expansion joint filler strips shall conform to ASTM D 1752, Type I. Wood, cork, or other cellulose-based material shall not be used.

2.1.2 Joint Seals and Sealants

2.1.2.1 Field Molded Sealants and Primer

Field molded sealants and primer shall conform to ASTM C 920, Type M, Grade NS, Class 25, use NT for non-horizontal joints and Type M, Grade P, Class 25, use T for horizontal joints. Bond breaker material shall be polyethylene tape, coated paper, metal foil or similar type materials. The back-up material shall be compressible, nonshrink, nonreactive with sealant, and nonabsorptive material type such as extruded butyl or polychloroprene foam rubber.

2.2 Waterstops

2.2.1 Non-Metallic Waterstops

Rubber waterstops shall conform to COE CRD-C 513. Polyvinylchloride waterstops shall conform to COE CRD-C 572.

2.3 TESTS, INSPECTIONS, AND VERIFICATIONS

2.3.1 Materials Tests

2.3.1.1 Field-Molded Sealants

Samples of sealant and primer, when use of primer is recommended by the manufacturer, as required in paragraph FIELD MOLDED SEALANTS AND PRIMER, shall be tested by and at the expense of the Government for compliance with paragraph FIELD MOLDED SEALANTS AND PRIMER. If the sample fails to meet specification requirements, new samples shall be provided and the cost of retesting will be deducted from payments due the Contractor.

2.3.1.2 Non-Metallic Waterstops

Samples of materials and splices as required in paragraph SUBMITTALS shall be visually inspected and tested by and at the expense of the Government for compliance with COE CRD-C 513 or COE CRD-C 572 as applicable. If a sample fails to meet the specification requirements, new samples shall be provided and the cost of retesting will be deducted from payments due the Contractor at the rate of $2,100.00 (for materials complying with COE CRD-C 513) or $1,900.00 (for materials compiylng with COE CRD-C 572) per material sample retested and $360.00 per splice sample retested. Samples shall be sent to Brett Williams, U.S. Army Engineer Research and Development Center (ERDC), Attn: CEERD-GM-C 3909, Halls Ferry Rd., Vicksburg, MS 39180-6199.

2.3.1.3 Non-Metallic Hydrophilic

Swellable strip type compound of polymer modified chloroprene rubber that swells upon contact with water shall conform to ASTM D 412 as follows:

Tensile strength 420 psi minimum; ultimate elongation 600 percent minimum. Hardness shall be 50 minimum on the type A durometer and the volumetric expansion ratio in distilled water at 70 degrees F shall be 3 to 1 minimum.

2.3.2 Splicing Waterstops

2.3.2.1 Procedure and Performance Qualifications

Procedure and performance qualifications for splicing waterstops shall be demonstrated in the presence of the Contracting Officer.

2.3.2.2 Non-Metallic Waterstops

Procedure and performance qualifications for splicing non-metallic material waterstops shall be demonstrated by the manufacturer at the factory and the Contractor at the job site by each making three spliced samples of each size and type of finished waterstop.

PART 3 EXECUTION

3.1 INSTALLATION

Joint locations and details, including materials and methods of installation of joint fillers and waterstops, shall be as specified, as shown, and as directed. In no case shall any fixed metal be continuous through an expansion joint.

3.1.1 Expansion Joints

Preformed expansion joint filler shall be used in expansion and isolation joints between slabs on grade and vertical surfaces where indicated. The filler shall extend the full slab depth, unless otherwise indicated. The edges of the joint shall be neatly finished with an edging tool of 1/8 inch radius. Where the joint is to receive a sealant, the filler strips shall be installed at the proper level below the finished floor with a slightly tapered, dressed and oiled wood strip temporarily secured to the top to form a recess to the size shown on the drawings. The wood strip shall be removed after the concrete has set. No wood, cork, or other cellulose-based material shall remain in the joints. The Contractor may use a removable expansion filler cap designed and fabricated for this purpose in lieu of the wood strip. The groove shall be thoroughly cleaned of laitance, curing compound, foreign materials, protrusions of hardened concrete, and any dust, which shall be blown out of the groove with oil-free compressed air.

3.1.2 Joints With Field-Molded Sealant

Joints shall not be sealed when the sealant, air or concrete temperature is less than 40 degrees F. Immediately prior to installation of field molded sealants, the joint shall be cleaned of all debris and further cleaned using water, chemical solvents or other means as recommended by the sealant manufacturer. The joints shall be dry prior to filling with sealant. Bond breaker and back-up material shall be installed where required. Joints shall be primed and filled flush with joint sealant in accordance with the manufacturer's recommendations.

3.1.3 Waterstops

Waterstops shall be carefully and correctly positioned during installation

to eliminate faulty installation that may result in joint leakage. Adequate provision shall be made to support and protect the waterstops during the progress of work. Any waterstop punctured or damaged shall be replaced or repaired at the Contractor's expense. The concrete shall be thoroughly consolidated in the vicinity of the waterstop. Suitable guards shall be provided to protect exposed projecting edges and ends of partially embedded waterstops from damage when concrete placement has been discontinued.

3.1.4 Non-Metallic Hydrophilic Waterstop

Ends to be joined shall be miter cut with sharp knife or shears. The ends shall be adhered with cyanacryiate (super glue) adhesive. When joining hydrophilic type waterstop to PVC waterstop, the hydrophilic waterstop shall be positioned as shown on the drawings. A liberal amount of a single component hydrophilic sealant shall be applied to the junction to complete the transition.

3.1.5 Splices

Joints in waterstops shall be spliced together by qualified splicers using the approved splicing procedures to form a continuous watertight diaphragm. Splices shall be as followed:

a. Non-Metallic Waterstops - All splices shall be made on a bench in a temporary shop provided at the site of the installation or at the manufacturer's plant. A miter guide and portable power saw shall be used to cut the ends to be joined to insure good alignment and contact between joined surfaces. Continuity of the characteristic features of the cross section of the waterstop (ribs, tabular center axis, protrusions and the like) shall be maintained across the splice.

b. Rubber Waterstops - Splices shall be vulcanized in accordance with the manufacturer's recommendations.

c. Polyvinylchloride Waterstops - Splices shall be made by heat sealing the adjacent surfaces in accordance with the approved procedure. A thermostatically controlled electrical heat source shall be used to make all splices. The correct temperature at which splices should be made will differ with the material concerned but the applied heat should be sufficient to melt but not char the plastic. Waterstops shall be reformed at splices with a remolding iron with ribs or corrugations to match the pattern of the waterstop. The spliced area, when cooled and bent by hand in as sharp an angle as possible, shall show no sign of separation.

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SECTION 03 21 00.00 12

REINFORCING STEEL

PART 1 GENERAL

1.1 SCOPE

The work covered by this section consists of furnishing all equipment, materials and labor for providing and placing steel bars, and accessories for concrete reinforcement.

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.

ACI INTERNATIONAL (ACI)

ACI 318/318R	(2008; Errata 2008) Building Code Requirements for Structural Concrete and Commentary
ACI SP-66	(2004) ACI Detailing Manual

ASTM INTERNATIONAL (ASTM)

ASTM A 615/A 615M	(2008a) Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement
ASTM E 8-04	(2004) Tension Testing of Metallic Materials

1.3 MEASUREMENT AND PAYMENT

No separate measurement or payment will be made for reinforcement bars and accessories. Payment for furnishing and placing reinforcement bars and accessories shall be included in the contract prices for the items of work to which the reinforcement bars and accessories are incidental.

1.4 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. The following shall be submitted in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Fabrication and Placement

The Contractor shall prepare and submit complete shop drawings

to the Contracting Officer for approval in accordance with specified requirements. Shop drawings shall include the details of bar supports including types, sizes, spacing and sequence.

SD-03 Product Data

Butt-Splices; G, DO

The Contractor shall submit the proposed procedure for butt-splicing steel bars prior to making the test butt-splices for qualification of the procedure. Properties and analyses of steel bars and splicing materials shall be included in the submitted procedure. Physical properties of splicing sleeves shall include length, inside and outside diameters, and inside surface details.

Materials

A system of identification which shows the disposition of specific lots of approved materials in the work shall be established and submitted before completion of the contract.

SD-06 Test Reports

Material
Tests, Inspections, and Verifications

Certified tests reports of reinforcement steel showing that the steel complies with the applicable specifications shall be furnished for each steel shipment and identified with specific lots prior to placement.

1.5 QUALITY CONTROL

1.5.1 Materials Tests

The Contractor shall have required material tests performed by an approved laboratory to demonstrate that the materials are in conformance with the specifications. Tension tests shall be performed on full cross section specimens in accordance with ASTM E 8-04, using a gage length that spans the extremities of specimens with welds or sleeves included. Tests shall be at the Contractor's expense.

1.5.2 General

The Contractor shall establish and maintain quality control for proper installation of all work covered in this section to assure compliance with contract specifications and maintain records of his quality control for all construction operations including but not limited to the following:

(1) Minimum concrete cover of reinforcement steel.

(2) Number, size, and location of placement.

(3) Maintain adequate splicing lengths where required.

(4) Tests, Inspections, and Verifications

1.5.3 Reporting

The original and two copies of these records 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 01 45 04.00 12 CONTRACTOR QUALITY CONTROL.

PART 2 PRODUCTS

2.1 MATERIALS

2.1.1 Reinforcing Steel

Billet steel bars shall conform to ASTM A 615/A 615M, Grade 60 for bar sizes 3 through 11, including the following requirements:

(1) Tension test specimens shall be bars of full cross section as rolled for all sizes.

(2) The bend test requirements shall be based upon 180-degree bends of full size bars for all grades of steel. The bend diameters for bend tests shall be as indicated in the following table and shall be measured on the inside of bars:

Bar Size	Maximum Diameter
#3, #4 and #5	4 bar diameters
#6, #7 and #8	5 bar diameters
#9, #10 and #11	5 bar diameters

2.1.2 Accessories

2.1.2.1 Bar Supports

Bar supports shall conform to ACI SP-66. Supports for bars in concrete with formed surfaces exposed to view or to be painted shall be plastic-coated wire, stainless steel or precast concrete supports. Precast concrete supports shall be wedged-shaped, not larger than 3-1/2 by 3-1/2 inches, of thickness equal to that indicated for concrete cover and have an embedded hooked tie-wire for anchorage. Bar supports used in precast concrete with formed surfaces exposed to view shall be the same quality, texture and color as the finish surfaces.

2.1.2.2 Wire Ties

Wire ties shall be 16 gage or heavier black annealed wire.

PART 3 EXECUTION

3.1 PLACEMENT

Reinforcement steel and accessories shall be placed as specified herein, shown on the drawings and on approved shop drawings. Holes cut in steel sheet piling for passing reinforcing bars shall not exceed 2 inches in diameter. Where holes fall in the web of the steel sheet pile, the hole shall be slotted 4 inches horizontally to accommodate passing the reinforcing bars. Fabrication and placement details of steel and accessories not specified or shown shall be in accordance with ACI SP-66 and ACI 318/318R. Steel reinforcement shall be fabricated to shapes and

dimensions shown, placed where indicated within specified tolerances and adequately supported during concrete placement. At the time of concrete placement all steel shall be free from loose, flaky rust, scale (except tight mill scale), mud, oil, grease or any other coating that might reduce the bond with the concrete.

3.1.1 Hooks and Bends

Reinforcement bars shall be mill or field-bent. All steel shall be bent cold unless authorized. No steel bars shall be bent after being partially embedded in concrete unless indicated or authorized. No steel bars partially embedded in concrete shall be field bent unless indicated on the drawings or otherwise authorized. All hooks or bends shall be in accordance with ACI 318/318R.

3.1.2 Placing Tolerances

3.1.2.1 Spacing of Bars

Bars shall be spaced as indicated on the drawings or as otherwise directed. The spacing between adjacent bars and the distance between layers of bars may not vary from the indicated position by more than one bar diameter nor more than 1 inch, whichever is less.

3.1.2.2 Concrete Cover

The minimum and maximum concrete cover of main reinforcement steel shall be as indicated on the drawings. The concrete tolerances shall be as follows:

MINIMUM COVER	VARIATION
6 inch	plus 1/2 inch
4 inch	plus 3/8 inch
3 inch	plus 3/8 inch
2 inch	plus 1/4 inch
1-1/2 inch	plus 1/4 inch
1 inch	plus 1/8 inch
3/4 inch	plus 1/8 inch

3.1.3 Splicing

Butt-splices in reinforcement steel shall be as specified, shown on the drawings or as directed by the Contracting Officer. Bars may be spliced at alternate or additional locations at no additional cost to the Government, subject to the approval of the Contracting Officer. Except as provided herein, all splicing shall be in accordance with approved splicing procedures and the requirements of ACI 318/318R. Bars larger than No. 11 shall be spliced with mechanical connectors or butt-welded in accordance with ACI 318/318R. The splice shall be submitted to the Contracting Officer for approval.

3.1.3.1 Lap Splices

Lap splices shall be used only for bars smaller than size #14. Bar laps may be placed in contact and securely tied or spaced transversely apart to permit the embedment of the entire surface of each bar in concrete, but shall not be spaced farther apart than one fifth the required length of lap nor 6 inches. Lengths of laps for bars shall conform to the requirements of ACI 318/318R, except when otherwise shown on the drawings.

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CAST-IN-PLACE STRUCTURAL CONCRETE

PART 1 GENERAL

1.1 SCOPE

The work covered by this section consists of furnishing all plant, labor, materials, and performing all operations in connection with furnishing and placing cast-in-place concrete as indicated on drawings and specified herein.

1.2 RELATED WORK SPECIFIED ELSEWHERE

a. Section 03 15 13.00 12 EXPANSION JOINTS AND WATERSTOPS.

b. Section 03 21 00.00 12 REINFORCING STEEL.

c. Section 03 11 14.00 12 FORMWORK FOR CONCRETE.

1.3 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.

ACI INTERNATIONAL (ACI)

ACI 117	(2006) Standard Specifications for Tolerances for Concrete Construction and Materials
ACI 211.1	(1991; R 2002) Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete
ACI 214R	(2002) Recommended Practice for Evaluation of Strength Test Results of Concrete
ACI 305R	(1999; Errata 2006) Hot Weather Concreting
ACI 318/318R	(2008; Errata 2008) Building Code Requirements for Structural Concrete and Commentary

ASTM INTERNATIONAL (ASTM)

ASTM C 29/C 29M	(2007) Standard Test Method for Bulk Density ("Unit Weight") and Voids in Aggregate
ASTM C 31/C 31M	(2009) Standard Practice for Making and Curing Concrete Test Specimens in the Field

ASTM C 33	(2007) Standard Specification for Concrete Aggregates
ASTM C 39/C 39M	(2008) Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens
ASTM C 42/C 42M	(2004) Standard Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete
ASTM C 94/C 94M	(2009) Standard Specification for Ready-Mixed Concrete
ASTM C 127	(2007) Standard Test Method for Density, Relative Density (Specific Gravity), and Absorption of Coarse Aggregate
ASTM C 128	(2007a) Standard Test Method for Density, Relative Density (Specific Gravity), and Absorption of Fine Aggregate
ASTM C 136	(2006) Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates
ASTM C 143/C 143M	(2009) Standard Test Method for Slump of Hydraulic-Cement Concrete
ASTM C 150	(2007) Standard Specification for Portland Cement
ASTM C 171	(2007) Standard Specification for Sheet Materials for Curing Concrete
ASTM C 172	(2008) Standard Practice for Sampling Freshly Mixed Concrete
ASTM C 192/C 192M	(2007) Standard Practice for Making and Curing Concrete Test Specimens in the Laboratory
ASTM C 231	(2009a) Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method
ASTM C 260	(2006) Standard Specification for Air-Entraining Admixtures for Concrete
ASTM C 309	(2007) Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete
ASTM C 494/C 494M	(2008a) Standard Specification for Chemical Admixtures for Concrete
ASTM C 566	(1997; R 2004) Standard Test Method for Total Evaporable Moisture Content of Aggregate by Drying

ASTM C 595	(2008a) Standard Specification for Blended Hydraulic Cements
ASTM C 597	(2002) Pulse Velocity Through Concrete
ASTM C 618	(2008a) Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete
ASTM C 803/C 803M	(2003) Penetration Resistance of Hardened Concrete
ASTM C 805	(2002) Rebound Number of Hardened Concrete
ASTM C 989	(2009a) Standard Specification for Ground Granulated Blast-Furnace Slag for Use in Concrete and Mortars
ASTM C 1017/C 1017M	(2007) Standard Specification for Chemical Admixtures for Use in Producing Flowing Concrete
ASTM C 1059	(1999) Standard Specification for Latex Agents for Bonding Fresh to Hardened Concrete
ASTM C 1064/C 1064M	(2008) Standard Test Method for Temperature of Freshly Mixed Hydraulic-Cement Concrete
ASTM C 1077	(2009b) Standard Practice for Laboratories Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Laboratory Evaluation
ASTM C 1107/C 1107M	(2008) Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Nonshrink)
ASTM C 1567	(2008) Standard Test Method for Potential Alkali-Silica Reactivity of Combinations of Cementitious Materials and Aggregate (Accelerated Mortar-Bar Method)
ASTM D 75	(2003) Standard Practice for Sampling Aggregates

NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY (NIST)

NIST HB 44	(2007) NIST Handbook 44: Specifications, Tolerances, and other Technical Requirements for Weighing and Measuring Devices

NATIONAL READY MIXED CONCRETE ASSOCIATION (NRMCA)

NRMCA CPMB 100	(2000) Concrete Plant Standards

U.S. ARMY CORPS OF ENGINEERS (USACE)

COE CRD-C 94	(1995) Specification for Surface Retarders
COE CRD-C 104	(1980) Method of Calculation of the Fineness Modulus of Aggregate
COE CRD-C 143	(1962) Specifications for Meters for Automatic Indication of Moisture in Fine Aggregates
COE CRD-C 400	(1963) Requirements for Water for Use in Mixing or Curing Concrete
COE CRD-C 521	(1981) Standard Test Method for Frequency and Amplitude of Vibrators for Concrete

LOUISIANA STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES (2006 Edition), LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT (LADOTD)

LSSRB 1003.02	Aggregates for Portland Cement Concrete and Mortar

U.S. GENERAL SERVICES ADMINISTRATION (GSA)

FS CCC-C-467C	(Feb 8, 1972) Cloth, Burlap, Jute (or Kenaf)

1.4 MEASUREMENT AND PAYMENT

No measurement will be made for concrete. Payment for concrete will be made at the contract lump sum price for "Reinforced Concrete Floodwall". Price and payment shall include the cost of all labor, materials, and the use of all equipment and tools required to complete the concrete work and furnishing and installing all miscellaneous metal. Reinforced concrete monoliths consist of base slabs, stabilization slabs, walls, reinforcing steel, formwork, waterstops, expansion joint filler, and other components incidental thereto.

1.5 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. The following shall be submitted in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-03 Product Data

Concrete Mixture Proportions; G, RO

Concrete mixture proportions shall be determined by the Contractor, in accordance with the requirements in paragraph CONCRETE MIXTURE PROPORTIONS, and submitted for approval. The concrete mixture quantities of all ingredients per cubic yard and nominal maximum coarse aggregate size that will be used in the manufacture of each quality of concrete shall be stated. Proportions shall indicate the mass of cement, pozzolan and ground

granulated blast furnace slag, if used, and water; the mass of aggregates in a saturated surface-dry condition; and the quantities of admixtures. The submission shall be accompanied by test reports from a laboratory complying with ASTM C 1077, which show that proportions thus selected will produce concrete of the qualities indicated. The submission shall provide information specified in paragraph DOCUMENTING AVERAGE STRENGTH, and if applicable, paragraph DETERMINING STANDARD DEVIATION. Mix proportions, exact slump and exact air content shall be reported for each concrete cylinder used to develop the mix design. No substitution shall be made in the source or type of materials used in the work without additional tests to show that the quality of the new materials and concrete are satisfactory.

Aggregates; G, RO

Information identifying the aggregate source to be used along with gradation tests for fine and coarse aggregates shall be submitted for approval. The gradation test for fine aggregate shall include the No. 8 and No. 30 sieve sizes. Specific gravity and absorption of fine and coarse aggregates determined by ASTM C 128 and ASTM C 127, respectively shall also be submitted.

Batch Plant

The Contractor shall submit batch plant data to the Contracting Officer for review for conformance with paragraphs Capacity and BATCH PLANT.

Concrete Mixers.

The Contractor shall submit concrete mixer data, which includes the make, type, and capacity of concrete mixers for review of conformance with paragraphs CAPACITY and CONCRETE MIXERS.

Conveying Equipment and Methods

The conveying equipment and methods for transporting, handling, and depositing the concrete shall be submitted for review for conformance with paragraphs CAPACITY and CONVEYING EQUIPMENT.

Placing Equipment and Methods

All placing equipment and methods shall be submitted for review for conformance with paragraphs CAPACITY and PLACING.

Nonshrink Grout.

Descriptive literature of the nonshrink grout, meeting the specification requirements, proposed for use shall be furnished together with a certificate from the manufacturer stating that it is suitable for the application or exposure for which it is being considered; or the Contractor shall submit the application and exposure where the group is to be used and shall submit manufacturer's literature indicating that the grout is appropriate for the application and exposure and meets all specification requirements.

SD-04 Samples

Surface Retarder

Sample of surface retarder material with manufacturer's instructions for application in conjunction with air-water cutting.

SD-05 Design Data

Construction Joint Treatment; G, RO

The method and equipment proposed for construction joint preparation and waste disposal shall be submitted for review for conformance with paragraph CONSTRUCTION JOINT TREATMENT.

Curing and Protection; G, RO

The curing medium and methods to be used shall be submitted for review for conformance with paragraph CURING AND PROTECTION.

Cold-Weather Placing; G, RO

If concrete is to be placed under cold-weather conditions, the proposed materials, methods, and protection shall be submitted for review for conformance with paragraph COLD-WEATHER PLACING.

Hot-Weather Placing; G, RO

If concrete is to be placed under hot-weather conditions, the proposed materials and methods, meeting the requirements of paragraph HOT-WEATHER PLACING and paragraph FINISHING, shall be submitted for review.

SD-06 Test Reports

Testing and Inspection for Contractor Quality Control; G, RO

Certified copies of laboratory test reports, including mill tests and all other test data, for portland cement, blended cement, pozzolan, slag, aggregate, admixtures, and curing compound proposed for use on this project.

Uniformity of Concrete Mixing

The results of the initial mixer uniformity tests as required in paragraph UNIFORMITY OF CONCRETE MIXING shall be submitted at least 5 days prior to the initiation of placing. The initial test results submitted shall not be more than three months old. Additional tests shall be conducted and submitted within six months of the previous tests. Uniformity testing shall continue until all concrete is placed.

Tests and Inspections

Test results and inspection reports shall be submitted daily and weekly as required in paragraph REPORTS.

SD-07 Certificates

Qualifications

The Contractor shall submit statements that the concrete testing technicians and the concrete inspectors meet the qualification requirements of paragraph TESTS AND INSPECTIONS.

Cementitious Materials; G, RO

Cementitious materials will be accepted on the basis of the manufacturer's certification of compliance, accompanied by mill test reports, stating that materials meet the requirements of the specification under which they are furnished. Certification and mill test reports shall be from samples taken from current production and be representative of the particular lot furnished. If average values are submitted, they shall be furnished with daily test results. If a blended product meeting ASTM C 595 is to be used, the manufacturer shall also certify in writing that the amount of pozzolan in the finished cement will not vary more than plus or minus 5.0 mass percent of the finished cement from lot to lot or within a lot. No cementitious materials shall be used until notice of acceptance has been given by the Contracting Officer. Cementitious materials will be subject to check testing from samples obtained at the source, at transfer points, or at the project site, as scheduled by the Contracting Officer, and such sampling will be by or under the supervision of the Government at its expense. Material not meeting specifications shall be promptly removed from the site of work.

Impervious-Sheet Curing Materials

Impervious-sheet curing materials shall be certified for compliance with all specification requirements.

Air-Entraining Admixture

Air-entraining admixture shall be certified for compliance with all specification requirements.

Other Chemical Admixtures

Other chemical admixtures shall be certified for compliance with all specification requirements.

Membrane-Forming Curing Compound

Membrane-forming curing compound shall be certified for compliance with all specification requirements.

Latex Bonding Compound

Latex bonding compound shall be certified for compliance with all specification requirements.

1.6 GOVERNMENT TESTING AND SAMPLING

The Contractor shall provide facilities and labor as may be necessary for procurement of representative test samples of aggregates and concrete. Concrete and aggregate requirements in this paragraph and its subparagraphs do not relieve the Contractor of the requirements outlined in paragraph TESTS AND INSPECTIONS.

1.6.1 Aggregates

The aggregate sources listed in the General Provision entitled "AGGREGATE SOURCES" (see Section 01100 GENERAL PROVISIONS) have been tested and at the time testing was performed, these sources were capable of producing materials of a quality acceptable for this project provided suitable processing was performed. Due to time constraints of this project, the Contractor shall be limited to the aggregate supply sources noted above.

1.6.2 Concrete

The Government will determine when concrete shall be sampled. The Contractor shall cast, protect and deliver concrete cylinders and determine slump and air content. The person conducting the tests shall meet the Concrete Field Testing Technician requirements contained in paragraph QUALIFICATIONS. Concrete shall be sampled in accordance with ASTM C 172. When cylinders are molded, slump and air content shall be determined in accordance with ASTM C 143/C 143M and ASTM C 231, respectively. Test samples for each class of concrete shall be taken at least once every 8-hour shift or for every 150 cubic yards placed, whichever requires more samples. From each sample, three 6-inch by 12-inch compression test specimens shall be made in accordance with ASTM C 31/C 31M. Compression test specimens shall be cured while in the field in accordance with paragraphs 10.1, 10.1.1 and 10.1.2 of ASTM C 31/C 31M. If cylinders are not delivered to the testing laboratory within 24 to 48 hours after molding, they shall be submerged in a water tank provided by the Contractor, where the surrounding water temperature is maintained by the Contractor at 73.4 plus or minus 3 degrees F. Cylinders shall be transported in accordance with ASTM C 31/C 31M (with cushioning material) and unloaded in the Government designated location. Compression testing will be performed by the Government in accordance with ASTM C 39/C 39M. One cylinder will be tested at 7 days for information and two cylinders will be tested at the specified design age for acceptance.

1.6.3 Concrete Strength

Compressive strength test specimens required in paragraph CONCRETE will be used to determine compliance. The strength of the concrete will be considered satisfactory so long as the average of all sets of three consecutive test results equals or exceeds the specified compressive strength f'_c and no individual test result falls below the specified strength f'_c by more than 500 psi. A "test" is defined as the average of two companion cylinders, or if only one cylinder is tested, the results of the single cylinder test. Additional analysis or testing, including nondestructive testing, taking cores and/or load tests may be required at the Contractor's expense when the strength of the concrete in the structure is considered potentially deficient.

1.6.3.1 Investigation of Low-Strength Test Results

When any strength test of standard-cured test cylinders falls below the specified strength requirement by more than 500 psi or if tests of field-cured cylinders indicate deficiencies in protection and curing, steps shall be taken to assure that the load-carrying capacity of the structure is not jeopardized. Nondestructive testing in accordance with ASTM C 597, ASTM C 803/C 803M, or ASTM C 805 may be permitted by the Contracting Officer to estimate the relative strengths at various locations in the structure as an aid in evaluating concrete strength in place or for

selecting areas to be cored. Such tests shall not be used as a basis for acceptance or rejection.

1.6.3.2 Testing of Cores

When the strength of concrete in place is considered potentially deficient, cores shall be obtained and tested in accordance with ASTM C 42/C 42M. At least three representative cores shall be taken from each member or area of concrete in place that is considered potentially deficient. The location of cores will be determined by the Contracting Officer to least impair the performance of the structure. Concrete in the area represented by the core testing will be considered adequate if the average strength of the cores is equal to at least 85 percent of the specified strength requirement and if no single core is less than 75 percent of the specified strength requirement.

1.6.3.3 Load Tests

If the core tests are inconclusive or impractical to obtain or if structural analysis does not confirm the safety of the structure, load tests may be directed by the Contracting Officer in accordance with the requirements of ACI 318/318R. Concrete work evaluated by structural analysis or by results of a load test shall be corrected in a manner satisfactory to the Contracting Officer. All investigations, testing, load tests, and correction of deficiencies will be performed and approved by the Contracting Officer at the expense of the Contractor, except that if all concrete is in compliance with the plans and specifications, the cost of investigations, testing, and load tests will be at the expense of the Government.

1.7 DESIGN REQUIREMENTS

1.7.1 Concrete Strength

Specified compressive strength f'_c shall be as follows:

Compressive Strength (PSI)	Structure Or Portion Of Structure
4,000 @ 28 days	All concrete, except stabilization slabs
2,500 @ 28 days	stabilization slab

1.7.2 Maximum Water-Cementitious Materials (W/CM) Ratio

Maximum W/CM shall be as follows:

W/CM, By Mass	Structure Or Portion Of Structure
0.50	All concrete, except stabilization slabs
0.60	stabilization slab

1.8 CONSTRUCTION TOLERANCES

1.8.1 General

The definitions of the terms used in the following tables shall be as defined in ACI 117. Level and grade tolerance measurements of slabs shall be made as soon as possible after finishing. When forms or shoring are

used, the measurements shall be made prior to removal. Tolerances are not cumulative. The most restrictive tolerance controls. Tolerances shall not extend the structure beyond legal boundaries. Except as specified otherwise, plus tolerance increases the amount or dimension to which it applies, or raises a level alignment, and minus tolerance decreases the amount or dimension to which it applied, or lowers a level alignment. A tolerance without a sign means plus or minus. Where only one signed tolerance is specified, there is no limit in the other direction.

TOLERANCES FOR FOUNDATIONS

(1) Level alignment

Top of footings ..... plus 1/2 inch
..... minus 2 inch

(2) Cross-sectional dimensions

Horizontal dimension of formed members ..... plus 2 inch
.....minus 1/2 inch

Horizontal dimensions of unformed
members cast against soil

2 feet or less ..... plus 3 inch
..... minus 1/2 inch

Greater than 2 feet but
less than 6 feet ..... plus 6 inch
..... minus 1/2 inch

Over 6 feet ..... plus 12 inch
..... minus 1/2 inch

Vertical dimension (thickness) ..... minus 5 percent

(3) Relative alignment

Slope of footing side and top
surfaces with respect to
the specified plane ..... 1 inch per 10 feet

TOLERANCE FOR FINISHED FORMED CONCRETE SURFACES

(1) Vertical alignment

Formed surfaces slope with
respect to the specified plane

Vertical alignment of outside
corner of control joint
grooves in concrete exposed to view ..... 1/4 inch in 10 feet

All other conditions ..... 3/8 inch in 10 feet

(2) Abrupt variation
The offset between concrete
surfaces for the following
classes of surface:

Class A ..... 1/8 inch
Class D .....1 inch

(3) Gradual variation
Surface finish tolerances
as measured by placing a
freestanding (unleveled), 5-feet
straightedge for plane surface
or curved template for curved
surface anywhere on the
surface and allowing it to rest
upon two high spots within
72 hours after concrete placement.
The gap at any point
between the straightedge or
template and the surface shall
not exceed:

Class A ..... 1/8 inch
Class D ..... 1 inch

1.8.2 Appearance

Permanently exposed surfaces shall be cleaned, if stained or otherwise discolored, by a method that does not harm the concrete and that is approved by the Contracting Officer.

PART 2 PRODUCTS

2.1 MATERIALS

2.1.1 Cementitious Materials

Cementitious materials shall be portland cement or portland cement in combination with pozzolan and/or GGBF slag and shall conform to appropriate specifications listed below. Use of cementitious materials in architectural concrete shall be restricted to one color, one source, and one type.

2.1.1.1 Portland Cement

ASTM C 150, low alkali, Type I or II, except that the maximum amount of C3A in Type I cement shall be 15 percent. Cement with a Blaine Fineness of 400 square meters per kilogram or greater shall be considered a Type III cement.

2.1.1.2 High-Early-Strength Portland Cement

ASTM C 150, Type III, low alkali, shall not be used.

2.1.1.3 Pozzolan, Other than Silica Fume

Pozzolan shall conform to ASTM C 618, Class C or F, with the effectiveness in controlling alkali-silica reaction requirements of Table 3. Test results showing that the proposed combination of cementitious materials and aggregates will expand less than 0.10 percent in 16 days when tested in accordance with ASTM C 1567 may be substituted for the Effectiveness in Controlling Alkali-Silica Reaction test.

2.1.1.4 Ground Granulated Blast-Furnace Slag (GGBF)

GGBF shall conform to ASTM C 989, Grade 100 or Grade 120.

2.1.2 Aggregates

Concrete aggregate shall be produced from the sources listed in Section 01100 GENERAL PROVISIONS paragraph AGGREGATE SOURCES. Fine and coarse aggregates shall conform to the grading requirements of ASTM C 33 or LSSRB 1003.02. The quality of all aggregates shall conform to ASTM C 33. The nominal maximum size shall be as listed in paragraph NOMINAL MAXIMUM-SIZE COARSE AGGREGATE.

2.1.3 Chemical Admixtures

Chemical admixtures to be used, when required or permitted, shall conform to the appropriate specification listed.

2.1.3.1 Air-Entraining Admixture

The air-entraining admixture shall conform to ASTM C 260 and shall consistently cause the concrete to have an air content in the specified ranges under field conditions.

2.1.3.2 Water-Reducing or Retarding Admixture

Water-Reducing or Retarding Admixtures: ASTM C 494/C 494M, Type A, B, or D, except that the 6-month and 1-year compressive strength tests are waived.

High-Range Water Reducing Admixture: ASTM C 494/C 494M, Type F or G, except that the 6-month and 1-year strength requirements shall be waived. The admixture may be used only when approved by the Contracting Officer, such approval being contingent upon particular mixture control as described in the Contractor's Quality Control Plan.

2.1.3.3 Other Chemical Admixtures

Other chemical admixtures for use in producing flowing concrete shall comply with ASTM C 1017/C 1017M, Type 1 or 2. These admixtures shall be used only for concrete listed in paragraph SLUMP.

2.1.4 Curing Materials

2.1.4.1 Impervious-Sheet Curing Materials

Impervious-sheet curing materials shall conform to ASTM C 171, type optional, except polyethylene film shall not be used.

2.1.4.2 Membrane-Forming Curing Compound

The membrane-forming curing compound shall conform to ASTM C 309, Type 1-D or 2, Class B.

2.1.4.3 Burlap

Burlap used for curing shall conform to FS CCC-C-467C.

2.1.5 Water

Water for mixing and curing shall be fresh, clean, potable, and free of injurious amounts of oil, acid, salt, sugar, or alkali, except that nonpotable water may be used if it meets the requirements of COE CRD-C 400.

2.1.6 Nonshrink Grout

Nonshrink grout shall conform to ASTM C 1107/C 1107M and shall be a commercial formulation suitable for the application proposed.

2.1.7 Latex Bonding Compound

Latex bonding compound agents for bonding fresh to hardened concrete shall conform to ASTM C 1059, Type II.

2.2 Concrete Mixture Proportions

2.2.1 Quality of Mixture

For each portion of the structure, mixture proportions shall be selected so that the strength and W/CM requirements listed in paragraph DESIGN REQUIREMENTS are met.

2.2.2 Nominal Maximum-Size Coarse Aggregate

Nominal maximum-size coarse aggregate shall be 1-1/2 inches or 1 inch except 3/4 inch nominal maximum-size coarse aggregate shall be used when any of the following conditions exist: the narrowest dimension between sides of forms is less than 7-1/2 inches; the depth of the slab is less than 4 inches; the minimum clear spacing between reinforcing and sheet piling is less than 2-1/4 inches; or the minimum clear spacing between reinforcing is less than 2-1/4 inches.

2.2.3 Air Content

Air content as delivered to the forms and as determined by ASTM C 231 shall range from 4 to 7 percent except that when the nominal maximum-size coarse aggregate is 3/4 inch, it shall range from 4-1/2 to 7-1/2 percent.

2.2.4 Slump

The slump shall be determined in accordance with ASTM C 143/C 143M and shall range from 1 to 4 inches. Where placement by pump is approved, the slump shall range from 3 to 6 inches. Concrete may contain a chemical admixture meeting ASTM C 1017/C 1017M for use in producing flowing concrete. Before the addition of flowing concrete admixture, the slump shall not exceed 4 inches and afterwards in no case shall the slump exceed 8 inches.

2.2.5 Pozzolan Content

If pozzolan is used, it shall range from 15 to 35 percent by weight of the total cementitious materials.

2.2.6 Determining Standard Deviation

Where a concrete production facility has test records, a standard deviation shall be established in accordance with the applicable provisions of

ACI 214R. Test records from which a standard deviation is calculated shall:

(1) represent materials, quality control procedures, and conditions similar to those expected at the proposed work;

(2) not be from a project where the allowable changes in materials and/or proportions were more restricted than for the proposed work;

(3) represent concrete produced to meet a specified strength or strengths, f'_c, within 1000 psi of that specified for the proposed work;

(4) be from consecutive tests;

(5) be from different batches;

(6) be the average of strengths from two cylinders made from the same sample of concrete and tested at the age indicated in paragraph CONCRETE STRENGTH and

(7) be from concrete that was produced within one year of the time when concrete placement is expected to begin for the proposed work.

2.2.6.1 For 30 or More Test Records

Use an unmodified standard deviation and calculate f_{cr} as specified in paragraph FOR 15 OR MORE TEST RECORDS.

2.2.6.2 For 15 to 29 Test Records

Where a concrete production facility does not have 30 test records, but does have a record based on 15 to 29 consecutive tests, a modified standard deviation may be established as the product of the standard deviation based on 15 to 29 tests and modification factor from the following table. Calculate f_{cr} as specified in paragraph REQUIRED AVERAGE COMPRESSIVE STRENGTH, F_{CR}, subparagraph FOR 15 OR MORE TEST RECORDS.

Number of Records *	Modification Factor for Standard Deviation
15	1.16
20	1.08
25	1.03
30 or more	1.00

*Interpolate for intermediate numbers of records.

2.2.6.3 For Less Than 15 Test Records

No standard deviation is needed. Calculation of f_{cr} shall be as specified in paragraph REQUIRED AVERAGE COMPRESSIVE STRENGTH, F_{CR}, subparagraph FOR LESS THAN 15 TEST RECORDS.

2.2.7 Required Average Compressive Strength, f_{cr}

In meeting the strength requirements specified in paragraph "Concrete Strength," the selected mixture shall have proportions so as to produce an f_{cr} exceeding f'_c as indicated in subparagraphs FOR 15 OR MORE TEST RECORDS or FOR LESS THAN 15 TEST RECORDS.

2.2.7.1 For 15 or More Test Records

If a standard deviation is calculated as specified in paragraph "Determining Standard Deviation," f'_{cr} shall be determined based on the value of f'_c and the standard deviation, S, as follows:

Standard Deviation, S	Required Average Compressive Strength, f_{cr} (psi)
Less than or equal to 505	$f'_c + 1.34\ S$
Greater than 505	$f'_c + 2.33\ S-500$

2.2.7.2 For Less Than 15 Test Records

When a concrete production facility does not have field strength test records for calculation of standard deviation, f_{cr} shall be determined based on the value of f'_c as follows:

Specified Compressive Strength, f'_c (psi)	Required Average Compressive Strength, f_{cr} (psi)
Less than 3000	$f'_c + 1000$
3000-5000	$f'_c + 1200$
Greater than 5000	$f'_c + 1400$

2.2.8 Documenting Average Strength

Documentation that proposed concrete proportions produce the required average strength, f_{cr}, determined in paragraph REQUIRED AVERAGE COMPRESSIVE STRENGTH, f_{cr} shall be based on previous field experience (paragraph FIELD EXPERIENCE) or laboratory trial batches (paragraph LABORATORY TRIAL BATCHES). Documentation shall include compression, slump and air content tests performed on concrete produced using the proposed mixture proportions.

2.2.8.1 Field Experience

Required average strength can be documented by field experience if compressive strength test records consisting of not less than 10 consecutive tests and encompassing a period of not less than 60 days are used. Test records shall represent similar materials to those proposed and similar conditions to those expected. Changes in materials, conditions, and proportions within the test record shall not have been more closely restricted than those for the proposed work.

2.2.8.2 Laboratory Trial Batches

The laboratory used to develop information required by this section shall comply with ASTM C 1077.

a. Delivery of Samples

Representative samples for all concrete materials proposed for this project and a copy of this section of the contract specifications entitled "CAST IN PLACE STRUCTURAL CONCRETE" shall be delivered to the laboratory that performs the concrete proportioning at least 60 days before concrete placement is expected to begin. Samples of approved aggregates shall be obtained in accordance with the requirements of ASTM D 75.

Samples of materials other than aggregate shall be representative of those proposed for the project and shall be accompanied by manufacturer's test reports indicating compliance with applicable specification requirements. When all of these materials have been delivered, the name, address, and phone number of this laboratory and a list of the sources and types of all concrete materials shall be submitted to the Contracting Officer.

b. Trial Mixtures

Trial mixtures having proportions, consistencies, maximum slump, and maximum air content suitable for the work shall be made based on ACI 211.1, using at least three different water cementitious materials ratios which will produce a range of strengths encompassing those required for the work. The trial mixtures shall have a slump and air content within plus or minus 3/4 inch and plus or minus 0.5 percent, respectively, of the maximum permitted. The target water cementitious materials ratios required in paragraph MAXIMUM WATER-CEMENTITIOUS MATERIALS (W/CM) RATIO include the total weight of cement,converted from absolute volume as described in ACI 211.1. Trial mixtures shall be designed in accordance with the procedure in ACI 211.1, Chapter 6, using the absolute volume basis for determining the required amount of fine aggregate. The dry rodded weight per cubic foot of the coarse aggregate determined according to ASTM C 29/C 29M; the fineness modulus of the fine aggregate determined according to COE CRD-C 104; and the yield, slump, washout and air content shall be reported. For each water cementitious materials ratio at least three test cylinders for each test age shall be made and cured in accordance with ASTM C 192/C 192M. The cylinders shall be tested in accordance with ASTM C 39/C 39M at 7 and 28 days. From these test results a curve shall be plotted and submitted showing the relationship between water cementitious materials ratio and strength at design age.

PART 3 EXECUTION

3.1 EQUIPMENT

3.1.1 Capacity

The batching, mixing, conveying, and placing equipment shall have a capacity of at least 30 cubic yards per hour.

3.1.2 Batch Plant

Batch plant shall conform to the requirements of NRMCA CPMB 100 and as specified; however, rating plates attached to batch plant equipment are not required.

3.1.2.1 Batching Equipment

The batching controls shall be partially automatic. The batching system shall be equipped with an accurate recorder or recorders that meet the requirements of NRMCA CPMB 100. Separate bins or compartments shall be provided for each size group of aggregate and cementitious material. Aggregates shall be weighed either in separate weigh batchers with individual scales or cumulatively in one weigh batcher on one scale. Aggregate shall not be weighed in the same batcher with cementitious

material. If both cement and other cementitious materials are used, they may be batched cumulatively provided that the portland cement is batched first. If measured by mass, the mass of the water shall not be weighed cumulatively with another ingredient. Water batcher filling and discharging valves shall be so interlocked that the discharge valve cannot be opened before the filling valve is fully closed. An accurate mechanical device for measuring and dispensing each admixture shall be provided. Each dispenser shall be interlocked with the batching and discharging operation of the water so that each admixture is separately batched and discharged automatically in a manner to obtain uniform distribution throughout the batch in the specified mixing period. Admixtures shall not be combined prior to introduction in water. The plant shall be arranged so as to facilitate the inspection of all operations at all times. Suitable facilities shall be provided for obtaining representative samples of aggregates from each bin or compartment. All filling ports for cementitious materials bins or silos shall be clearly marked with a permanent sign stating the contents.

3.1.2.2 Scales

The equipment for batching by mass shall conform to the applicable requirements of NIST HB 44, except that the accuracy shall be plus or minus 0.2 percent of scale capacity. The Contractor shall provide standard test weights and any other auxiliary equipment required for checking the operating performance of each scale or other measuring devices. Tests shall be made at the frequency required in paragraph TESTS AND INSPECTIONS, and in the presence of a government inspector.

3.1.2.3 Batching Tolerances

a. Weighing Tolerances

MATERIAL	PERCENT OF REQUIRED MASS
Cementitious materials	0 to plus 2
Aggregate	plus or minus 2
Water	plus or minus 1
Chemical admixture	0 to plus 6

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

Water:	Plus or minus 1 percent.
Chemical admixtures:	Zero to plus 6 percent.

3.1.2.4 Moisture Control

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

3.1.3 Concrete Mixers

The concrete mixers shall not be charged in excess of the capacity recommended by the manufacturer. The mixers shall be operated at the drum or mixing blade speed designated by the manufacturer. The mixers shall be maintained in satisfactory operating condition, and the mixer drums shall be kept free of hardened concrete. Should any mixer at any time produce unsatisfactory results, its use shall be promptly discontinued until it is repaired.

3.1.3.1 Stationary Mixers

Concrete plant mixers shall be tilting, nontilting, horizontal-shaft, vertical-shaft, or pugmill and shall be provided with an acceptable device to lock the discharge mechanism until the required mixing time has elapsed. The mixing time and uniformity shall conform to all the requirements in ASTM C 94/C 94M applicable to central-mixed concrete.

3.1.3.2 Truck Mixers

Truck mixers, the mixing of concrete therein, and concrete uniformity shall conform to the requirements of ASTM C 94/C 94M. A truck mixer may be used either for complete mixing (transit-mixed) or to finish the partial mixing done in a stationary mixer (shrink-mixed). Each truck shall be equipped with two counters from which it will be possible to determine the number of revolutions at mixing speed and the number of revolutions at agitating speed.

3.1.4 Conveying Equipment and Methods

The conveying equipment shall conform to the following requirements.

3.1.4.1 Buckets

The interior hopper slope shall be not less than 58 degrees from the horizontal, the minimum dimension of the clear gate opening shall be at least five times the nominal maximum-size aggregate, and the area of the gate opening shall not be less than 2 square feet. The maximum dimension of the gate opening shall not be greater than twice the minimum dimension. The bucket gates shall be essentially grout tight when closed and may be manually, pneumatically, or hydraulically operated except that buckets larger than 2 cubic yards shall not be manually operated. The design of the bucket shall provide means for positive regulation of the amount and rate of deposit of concrete in each dumping position.

3.1.4.2 Transfer Hoppers

Concrete may be charged into nonagitating hoppers for transfer to other conveying devices. Transfer hoppers shall be capable of receiving concrete directly from delivery vehicles and have conical-shaped discharge features. The transfer hopper shall be equipped with a hydraulically operated gate and with a means of external vibration to effect complete discharge. Concrete shall not be held in nonagitating transfer hoppers more than 30 minutes.

3.1.4.3 Trucks

Truck mixers operating at agitating speed or truck agitators used for transporting plant-mixed concrete shall conform to the requirements of

ASTM C 94/C 94M. Nonagitating equipment may be used for transporting plant-mixed concrete over a smooth road when the hauling time is less than 15 minutes. Bodies of nonagitating equipment shall be smooth, watertight, metal containers specifically designed to transport concrete, shaped with rounded corners to minimize segregation, and equipped with gates that will permit positive control of the discharge of the concrete.

3.1.4.4 Chutes

When concrete can be placed directly from a truck mixer, agitator, or nonagitating equipment, the chutes attached to this equipment by the manufacturer may be used. A discharge deflector shall be used when required by the Contracting Officer. Separate chutes and other similar equipment will not be permitted for conveying concrete.

3.1.4.5 Belt Conveyors

Belt conveyors shall be designed and operated to assure a uniform flow of concrete from mixer to final place of deposit without segregation of ingredients or loss of mortar and shall be provided with positive means for preventing segregation of the concrete at the transfer points and the point of placing. Belt conveyors shall be constructed such that the idler spacing shall not exceed 36 inches. The belt speed shall be a minimum of 300 feet per minute and a maximum of 750 feet per minute. If concrete is to be placed through installed horizontal or sloping reinforcing bars, the conveyor shall discharge concrete into a pipe or elephant trunk that is long enough to extend through the reinforcing bars.

3.1.4.6 Concrete Pumps

Concrete may be conveyed by positive displacement pump when approved. The pumping equipment shall be piston or squeeze pressure. The pipeline shall be rigid steel pipe or heavy-duty flexible hose. The inside diameter of the pipe shall be at least three times the nominal maximum-size coarse aggregate in the concrete mixture to be pumped but not less than 4 inches. Aluminum pipe shall not be used.

3.1.5 Vibrators

Vibrators of the proper size, frequency, and amplitude shall be used for the type of work being performed in conformance with the following requirements:

Application	Head Diameter Inches	Frequency VPM	Amplitude Inches
Thin walls, beams, etc.	1-1/4 to 2-1/2	9,000 to 13,500	0.02 to 0.04
General construction	2 to 3-1/2	8,000 to 12,000	0.025 to 0.05

The frequency and amplitude shall be determined in accordance with COE CRD-C 521.

3.2 PREPARATION FOR PLACING

3.2.1 Embedded Items

Before placement of concrete, care shall be taken to determine that all embedded items are firmly and securely fastened in place as indicated on the drawings, or required. Embedded items shall be free of oil and other

foreign matter such as loose coatings or rust, paint, and scale. The embedding of wood in concrete will be permitted only when specifically authorized or directed. Voids in sleeves, inserts, and anchor slots shall be filled temporarily with readily removable materials to prevent the entry of concrete into voids. Welding, including tack welding, will not be permitted on embedded metals within 2 feet of the surface of the concrete.

3.2.2 Concrete on Earth Foundations

Earth surfaces upon which concrete is to be placed shall be clean, damp, and free from debris, frost, ice, and standing or running water. Prior to placement of concrete, the earth foundation shall have been satisfactorily compacted in accordance with Section 31 23 16.16 12 STRUCTURAL EXCAVATION AND BACKFILL.

3.2.3 Construction Joint Treatment

Construction joint treatment shall conform to the following requirements.

3.2.3.1 Joint Preparation

Concrete surfaces to which additional concrete is to be bonded shall be prepared for receiving the next lift or adjacent concrete by ensuring that the surface is roughened to an amplitude of 1/4 inch by either air-water cutting, sandblasting, high-pressure water jet, or other approved method. Air-water cutting will not be permitted on formed surfaces or surfaces congested with reinforcing steel. Regardless of the method used, the resulting surfaces shall be free from all laitance and inferior concrete so that clean, well-bonded coarse aggregate is exposed uniformly throughout the lift surface. The edges of the coarse aggregate shall not be undercut. The surface shall be washed clean as the last operation prior to placing the next lift. There shall be no standing water on the surface upon which concrete is placed.

3.2.3.2 Air-Water Cutting

Air-water cutting of a construction joint shall be performed at the proper time and only on horizontal construction joints. The air pressure used in the jet shall be 90 to 110 psi, and the water pressure shall be just sufficient to bring the water into effective influence of the air pressure. When approved by the Contracting Officer, a surface retarder complying with the requirements of COE CRD-C 94 may be applied to the surface of the lift to prolong the period of time during which air-water cutting is effective. Prior to receiving approval, the Contractor shall furnish samples of the material to be used and shall demonstrate the method to be used in applications. After cutting, the surface shall be washed and rinsed as long as there is any trace of cloudiness of the wash water. Where necessary to remove accumulated laitance, coatings, stains, debris, and other foreign material, high-pressure water jet or sandblasting will be required as the last operation before placing the next lift.

3.2.3.3 High-Pressure Water Jet

A stream of water under a pressure of not less than 3,000 psi may be used for construction joint preparation. Its use shall be delayed until the concrete is sufficiently hard so that only the surface skin of mortar is removed and there is no undercutting of coarse-aggregate particles. If the water jet is incapable of uniformly exposing coarse aggregate, the surface shall be prepared by sandblasting.

3.2.3.4 Wet Sandblasting

This method may be used when the concrete has reached sufficient strength to prevent undercutting of the coarse aggregate particles. The surface of the concrete shall then be washed thoroughly to remove all loose materials.

3.2.3.5 Waste Disposal

The method used in disposing of waste water employed in cutting, washing, and rinsing of concrete surfaces shall be such that the waste water does not stain, discolor, or affect exposed surfaces of the structures, or damage the environment of the project area. The method of disposal shall be subject to approval.

3.3 PLACING EQUIPMENT AND METHODS

3.3.1 Placing Procedures

The surfaces of horizontal construction joints shall be kept continuously wet for the first 12 hours during the 24 hour period prior to placing concrete. The surfaces shall be at a saturated surface dry (SSD) condition at the time of concrete placement. Surfaces may be dampened immediately before placement if necessary. Concrete placement will not be permitted when, in the opinion of the Contracting Officer, weather conditions prevent proper placement and consolidation. Concrete shall be deposited as close as possible to its final position in the forms and, in so depositing, there shall be no vertical drop greater than 5 feet except where suitable equipment is provided to prevent segregation and where specifically authorized. Depositing of the concrete shall be so regulated that it may be effectively consolidated in horizontal layers 2 feet or less in thickness with a minimum of lateral movement. The amount deposited in each location shall be that which can be readily and thoroughly consolidated. Sufficient placing capacity shall be provided so that concrete placement can be kept plastic and free of cold joints while concrete is being placed. Concrete shall be placed by methods that will prevent segregation or loss of ingredients. Any concrete transferred from one conveying device to another shall be passed through a hopper that is conical in shape. The concrete shall not be dropped vertically more than 5 feet, except where a properly designed and sized elephant trunk with rigid drop chute bottom section is provided to prevent segregation and where specifically authorized. In no case will concrete be discharged to free-fall through reinforcing bars.

3.3.2 Placement by Pump

When concrete is to be placed by pump, the nominal maximum-size coarse aggregate shall not be reduced to accommodate the pumps. The distance to be pumped shall not exceed limits recommended by the pump manufacturer. The concrete shall be supplied to the concrete pump continuously. When pumping is completed, concrete remaining in the pipeline shall be ejected without contamination of concrete in place. After each operation, equipment shall be thoroughly cleaned, and flushing water shall be wasted outside of the forms. Grout used to lubricate the pumping equipment at the beginning of the placement shall not be incorporated into the placement.

3.3.3 Time Interval Between Mixing and Placing

Concrete shall be placed within 30 minutes after discharge into

nonagitating equipment. When concrete is truck-mixed or when a truck mixer or agitator is used for transporting concrete mixed by a concrete plant mixer, the concrete shall be delivered to the site of the work, and discharge shall be completed within 1-1/2 hours after introduction of the cement to the aggregates. When the length of haul makes it impossible to deliver truck-mixed concrete within these time limits, batching of cement and a portion of the mixing water shall be delayed until the truck mixer is at or near the construction site.

3.3.4 Cold-Weather Placing

When cold-weather placing of concrete is likely to be subjected to freezing temperatures before the expiration of the curing period, it shall be placed in accordance with procedures previously submitted in accordance with paragraph SUBMITTALS. The ambient temperature of the space adjacent to the concrete placement and surfaces to receive concrete shall be above 32 degrees F. The placing temperature of the concrete having a minimum dimension less than 12 inches shall be between 55 and 75 degrees F when measured in accordance with ASTM C 1064/C 1064M. The placing temperature of the concrete having a minimum dimension greater than 12 inches shall be between 50 and 70 degrees F. Heating of the mixing water or aggregates will be required to regulate the concrete-placing temperatures. Materials entering the mixer shall be free from ice, snow, or frozen lumps. Salt, chemicals, or other materials shall not be mixed with the concrete to prevent freezing.

3.3.5 Hot-Weather Placing

Concrete shall be properly placed and finished with procedures previously submitted in accordance with paragraph SUBMITTALS. The concrete-placing temperature shall not exceed 90 degrees F when measured in accordance with ASTM C 1064/C 1064M. Cooling of the mixing water and aggregates, or both, may be required to obtain an adequate placing temperature. A retarder shall be used to facilitate placing and finishing when concrete temperatures exceed 85 degrees F. Steel forms and reinforcement shall be cooled prior to concrete placement when steel temperatures are greater than 120 degrees F. Conveying and placing equipment shall be cooled if necessary to maintain proper concrete-placing temperature.

3.3.6 Consolidation

Immediately after placement, each layer of concrete, including flowing concrete, shall be consolidated by internal vibrating equipment. Vibrators shall not be used to transport concrete within the forms. Hand spading may be required, if necessary, with internal vibrating along formed surfaces permanently exposed to view. Form or surface vibrators shall not be used unless specifically approved. The vibrator shall be inserted vertically at uniform spacing over the entire area of placement. The distance between insertions shall be approximately 1-1/2 times the radius of action of the vibrator. The vibrator shall penetrate rapidly to the bottom of the layer and at least 6 inches into the preceding unhardened layer if such exists. It shall be held stationary until there is a general cessation in escape of large bubbles of entrapped air at the surface of the concrete (generally 5 to 15 seconds) then withdrawn slowly at about 3 inches per second.

3.4 FINISHING

The ambient temperature of spaces adjacent to surfaces being finished shall be not less than 40 degrees F. In hot weather when the rate of evaporation

of surface moisture, as determined by use of Figure 2.1.5 of ACI 305R, may reasonably be expected to exceed 0.2 pounds per square foot per hour, provisions for windbreaks, shading, fog spraying, or wet covering with a light-colored material shall be made in advance of placement, and such protective measures shall be taken as quickly as finishing operations will allow. All unformed surfaces that are not to be covered by additional concrete or backfill shall have a float finish. Additional finishing shall be as specified below and shall be true to the elevation shown in the drawings. Surfaces to receive additional concrete or backfill shall be brought to the elevation shown on the drawings and left true and regular. Exterior surfaces shall be sloped for drainage unless otherwise shown in the drawing or as directed. Joints shall be carefully made with a jointing or edging tool. The finished surfaces shall be protected from stains or abrasions. Grate tampers or jitterbugs shall not be used.

3.4.1 Unformed Surfaces

3.4.1.1 Float Finish

Surfaces shall be screeded and darbied or bullfloated to bring the surface to the required finish level with no coarse aggregate visible. No water, cement, or mortar shall be added to the surface during the finishing operation. The concrete, while still green but sufficiently hardened to bear a man's weight without more than about a 1/4 inch indentation, shall be floated to a true and even plane. Floating may be performed by use of suitable hand floats or power-driven equipment. Hand floats shall be made of magnesium or aluminum.

3.4.1.2 Trowel Finish

A trowel finish shall be applied to the top of the stem wall and exposed flat surfaces. Concrete surfaces shall be finished with a float finish, and after surface moisture has disappeared, the surface shall be troweled to a smooth, even, dense finish free from blemishes including trowel marks.

3.4.1.3 Broom Finish

A broom finish shall be applied to the sidewalks. The concrete surface shall be finished with a float finish. The floated surface shall be broomed with a fiber-bristle brush in a direction transverse to that of the main traffic.

3.4.2 Formed Surfaces

Unless another finish is specified, surfaces shall be left with the texture imparted by the forms except that defective surfaces shall be repaired as described in paragraph FORMED SURFACE REPAIR. Other finishes shall be applied to the following structures or portions of structures:

TYPES OF FINISH	STRUCTURE OR PORTION OF STRUCTURE
Grout-cleaned	Exposed surfaces of walls or columns

Unless painting of surfaces is required, uniform color of the concrete shall be maintained by use of only one mixture without changes in materials or proportions for any structure or portion of structure that is exposed to view or on which a special finish is required. The form panels used to

produce the finish shall be orderly in arrangement, with joints between panels planned in approved relation to openings, corners, and other architectural features. Forms shall not be reused if there is any evidence of surface wear or defects that would impair the quality of the surface.

3.4.2.1 Grout-Cleaned Finish

The surfaces of stem walls shall be given a grout-cleaned finish as described, as approved by the Contracting Officer and after all required curing, cleaning, and repairs have been completed. Surfaces to be grout-cleaned shall be moist cured for the required period of time before application of the grout-cleaned finish. Grout-cleaning shall be delayed until near the end of construction on all surfaces not to be painted in order to achieve uniformity of appearance and reduce the chance of discoloring caused by subsequent construction operations. The temperature of the air adjacent to the surface shall be not less than 40 degrees F for 24 hours prior to and 72 hours following the application of the finish. The finish for any area shall be completed in the same day, and the limits of a finished area shall be made at natural breaks in the finished surface. The surface to receive grout-cleaned finish shall be thoroughly wetted to prevent absorption of water from the grout but shall have no free water present. The surface shall then be coated with grout. The grout shall be applied as soon as the surface of the concrete approaches surface dryness and shall be vigorously and thoroughly rubbed over the area with clean burlap pads, cork floats or stones, so as to fill all voids. The grout shall be composed of one part portland cement as used on the project, to two parts by volume of well-graded sand passing a No. 30 sieve mixed with water to the consistency of thick paint. White portland cement shall be used for all or part of the cement as approved by the Contracting Officer to give the desired finish color. The applied coating shall be uniform, completely filling all pits, air bubbles, and surface voids. While the grout is still plastic, remove all excess grout by working the surface with a rubber float, burlap pad, or other means. Then, after the surface whitens from drying (about 30 minutes at normal temperature) rub vigorously with clean burlap pads. Immediately after rubbing is completed, the finished surface shall be continuously moist cured for 72 hours. Burlap pads used for this operation shall be burlap stretched tightly around a board to prevent dishing the mortar in the voids.

3.4.3 Formed Surface Repair

After removal of forms, all ridges, lips, and bulges on surfaces permanently exposed shall be removed. All repairs shall be completed within 48 hours after form removal.

3.4.3.1 Class A Finish

Surfaces listed in Section 03 11 14.00 12 FORMWORK FOR CONCRETE and as shown to have Class A finish shall have surface defects repaired as follows: defective areas, voids, and honeycombs smaller than 16 square inches in area and less than 1/2 inch deep and bug holes exceeding 1/2 inch in diameter shall be chipped and filled with dry-packed mortar. Holes left by removal of tie rods shall be reamed and filled with dry-packed mortar as specified in paragraph MATERIAL AND PROCEDURE FOR REPAIRS. Defective and unsound concrete areas larger than described shall be defined by 1/2 inch deep dovetailed saw cuts in a rectangular pattern with lines parallel to the formwork, the defective concrete removed by chipping, and the void repaired with replacement concrete. The prepared area shall be brush-coated with a latex bonding agent, or a neat cement grout after

dampening the area with water. The void shall be filled with replacement concrete in accordance with paragraph MATERIAL AND PROCEDURE FOR REPAIRS.

3.4.3.2 Class D Finish

Surfaces listed in Section 03 11 14.00 12 FORMWORK FOR CONCRETE and as shown to have class D finish shall have surface defects repaired as follows: defective areas, voids, and honeycombs greater than 48 square inches in area or more than 2 inches deep shall be defined by 1/2 inch deep dovetailed saw cuts in a rectangular pattern, the defective concrete removed by chipping and the void repaired with replacement concrete. The prepared area shall be brush-coated with a latex bonding agent meeting the requirements of paragraph LATEX BONDING COMPOUND, or a neat cement grout after dampening the area with water. The void shall be filled with replacement concrete in accordance with paragraph MATERIAL AND PROCEDURE FOR REPAIRS.

3.4.3.3 Material and Procedure for Repairs

The cement used in the dry-packed mortar or replacement concrete shall be a blend of the cement used for production of project concrete and white portland cement properly proportioned so that the final color of the mortar or concrete will match adjacent concrete. Trial batches shall be used to determine the proportions required to match colors. Dry-packed mortar shall consist of one part cement to two and one-half parts fine aggregate. The fine aggregate shall be that used for production of project concrete. The mortar shall be remixed over a period of at least 30 minutes without addition of water until it obtains the stiffest consistency that will permit placing. Mortar shall be thoroughly compacted into the prepared void by tamping, rodding, ramming, etc. and struck off to match adjacent concrete. Replacement concrete shall be produced using project materials and shall be proportioned by the Contracting Officer. It shall be thoroughly compacted into the prepared void by internal vibration, tamping, rodding, ramming, etc. and shall be struck off and finished to match adjacent concrete. Forms shall be used to confine the concrete. If an expanding agent is used in the repair concrete, the repair shall be thoroughly confined on all sides including the top surface. Metal tools shall not be used to finish permanently exposed surfaces. The repaired areas shall be cured for 7 days. The temperature of the in situ concrete, adjacent air, and replacement mortar or concrete shall be above 40 degrees F during placement, finishing, and curing. Other methods and materials for repair may be used only when approved in writing by the Contracting Officer. Repairs of the so called "plaster-type" will not be permitted.

3.5 Curing and Protection

3.5.1 Duration

The length of the curing period shall be determined by the type of cementitious material, as specified below. Concrete shall be cured by an approved method.

Type I portland cement ..... 7 days

Type II portland cement (including Type I/II) ..... 14 days
Portland cement blended with 25 percent or less
pozzolan or GGBF slag ..... 14 days

Portland cement blended with more than 25 percent

pozzolan or GGBF slag ..... 21 days

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

3.5.2 Moist Curing

Moist-cured concrete shall be maintained continuously, not periodically, wet for the entire curing period. Vertical surfaces shall be cured using soaker hoses, fog sprayers or sprinklers. Burlap may be used to assist moist curing provided that the wall and burlap are kept continuously saturated, including nights and weekends, and the burlap is kept in contact with the concrete being cured. If water or curing materials stain or discolor concrete surfaces that are to be permanently exposed, they shall be cleaned as required in paragraph APPEARANCE. Where wooden form sheathing is left in place during curing, the sheathing shall be kept wet at all times. Where steel forms are left in place during curing, the forms shall be carefully broken loose from the hardened concrete and curing water continuously applied into the void so as to continuously saturate the entire concrete surface. Horizontal surfaces may be moist cured by ponding, by covering with a minimum uniform thickness of 2 inches of continuously saturated sand, or by covering with saturated nonstaining burlap or cotton mats. Horizontal construction joints may be allowed to dry for 12 hours immediately prior to the placing of the following lift.

3.5.3 Membrane-Forming Curing Compound

Concrete may be cured with an approved membrane-forming curing compound in lieu of moist curing except that membrane curing will not be permitted on any surface to which other concrete is to be bonded, on any surface containing protruding steel reinforcement, or any surface maintained at curing temperature by use of free steam . A pigmented-type curing compound shall not be used on surfaces that will be exposed to view when the project is complete. Concrete cured with nonpigmented curing compound must be shaded from the sun for the first 3 days when the ambient temperature is 90 degrees F or higher.

3.5.3.1 Application

The curing compound shall be applied to formed surfaces immediately after the forms are removed and prior to any patching or other surface treatment except the cleaning of loose sand, mortar, and debris from the surface. The surfaces shall be thoroughly moistened with water, and the curing compound applied as soon as free water disappears. The curing compound shall be applied to unformed surfaces as soon as free water has disappeared and bleeding has stopped. The curing compound shall be applied in a two-coat continuous operation by approved motorized power-spraying equipment operating at a minimum pressure of 75 psi, at a uniform coverage of not more than 400 square feet per gallon for each coat, and the second coat shall be applied perpendicular to the first coat. Concrete surfaces that have been subjected to rainfall within 3 hours after curing compound has been applied shall be resprayed by the method and at the coverage specified. All concrete surfaces on which the curing compound has been

applied shall be adequately protected for the duration of the entire curing period from pedestrian and vehicular traffic and from any other cause that will disrupt the continuity of the curing membrane.

3.5.4 Evaporation Retardant

The following concrete surfaces may be cured using sheet material:

Top surface of foundations

Sheet curing shall not be used on vertical or near-vertical surfaces. All surfaces shall be thoroughly wetted and be completely covered with waterproof paper or polyethylene-coated burlap having the burlap thoroughly water-saturated before placing. Covering shall be laid with light-colored side up. Covering shall be lapped not less than 12 inches and securely weighted down or shall be lapped not less than 4 inches and taped to form a continuous cover with completely closed joints. The sheet shall be weighted to prevent displacement so that it remains in contact with the concrete during the specified length of curing. Coverings shall be folded down over exposed edges of slabs and secured by approved means. Sheets shall be immediately repaired or replaced if tears or holes appear during the curing period.

3.5.5 Cold-Weather Curing and Protection

When the daily outdoor low temperature is less than 32 degrees F, the temperature of the concrete shall be maintained above 40 degrees F for the first 7 days after placing. In addition, during the period of protection removal, the air temperature adjacent to the concrete surfaces shall be controlled so that concrete near the surface will not be subjected to a temperature differential of more than 25 degrees F as determined by observation of ambient and concrete temperatures indicated by suitable temperature measuring devices furnished by the Government as required and installed adjacent to the concrete surface and 2 inches inside the surface of the concrete. The installation of the thermometers shall be made by the Contractor at such locations as may be directed.

3.6 SETTING OF BASE PLATES AND BEARING PLATES

3.6.1 Setting of Plates

After being plumbed and properly positioned, column base plates, bearing plates for beams and similar structural members, and machinery and equipment base plates shall be provided with full bearing with nonshrink grout. The space between the top of concrete or masonry-bearing surface and the bottom of the plate shall be approximately 1/24 of the width of the plate, but not less than 1/2 inch for plates less than 12 inches wide. Concrete surfaces shall be rough, clean, and free of oil, grease, and laitance, and they shall be damp. Metal surfaces shall be clean and free of oil, grease, and rust.

3.6.2 Nonshrink Grout Application

Nonshrink grout shall conform to the requirements of paragraph NONSHRINK GROUT. Water content shall be the minimum that will provide a flowable mixture and fill the space to be grouted without segregation, bleeding, or reduction of strength.

3.6.2.1 Mixing and Placing of Nonshrink Grout

Mixing and placing shall be in conformance with the material manufacturer's instructions and as specified. Ingredients shall be thoroughly dry-mixed before adding water. After adding water, the batch shall be mixed for 3 minutes. Batches shall be of size to allow continuous placement of freshly mixed grout. Grout not used within 30 minutes after mixing shall be discarded. The space between the top of the concrete or masonry-bearing surface and the plate shall be filled solid with the grout. Forms shall be of wood or other equally suitable material for retaining the grout and shall be removed after the grout has set. If grade "A" grout as specified in ASTM C 1107/C 1107M is used, all surfaces shall be formed to provide restraint. The placed grout shall be worked to eliminate voids; however, overworking and breakdown of the initial set shall be avoided. Grout shall not be retempered or subjected to vibration from any source. Where clearances are unusually small, placement shall be under pressure with a grout pump. Temperature of the grout, and of surfaces receiving the grout, shall be maintained at 65 to 85 degrees F until after setting.

3.6.2.2 Treatment of Exposed Surfaces

After the grout has set, those types containing metallic aggregate shall have the exposed surfaces cut back 1 inch and immediately covered with a parge coat of mortar proportioned by mass of one part portland cement, two parts sand, and sufficient water to make the mixture placeable. The parge coat shall have a smooth, dense finish. The exposed surface of other types of nonshrink grout shall have a smooth, dense finish.

3.6.3 Curing

Grout and parge coats shall be cured in conformance with paragraph CURING AND PROTECTION.

3.7 TESTS AND INSPECTIONS

Tests and inspections shall conform to the following requirements.

3.7.1 Qualifications

The Contractor shall perform the inspections and tests described below, and, based upon the results of these inspections and tests, he shall take the action required and submit reports as required. When, in the opinion of the Contracting Officer, the concreting operation is out of control, concrete placement shall cease. The laboratory performing the tests shall conform to ASTM C 1077. The individuals who sample and test concrete or the constituents of concrete as required in this specification shall have demonstrated a knowledge and ability to perform the necessary test procedures equivalent to the ACI minimum guidelines for certification of Concrete Field Testing Technicians, Grade I. The individuals who perform the inspection of concrete construction shall have demonstrated a knowledge and ability equivalent to the ACI minimum guidelines for certification of Concrete Construction Special Inspector (CCSI) or Concrete Transportation Construction Inspector (CTCI). The Government will inspect the laboratory, equipment, and test procedures prior to start of concreting operations and at least once per year thereafter for conformance with ASTM C 1077.

3.7.2 Testing and Inspection for Contractor Quality Control

3.7.2.1 Fine Aggregate

a. Grading - At least once during each shift when the concrete plant is operating, there shall be one sieve analysis and fineness modulus determination in accordance with ASTM C 136 and COE CRD-C 104 for the fine aggregate or for each size range of fine aggregate if it is batched in more than one size or classification. The location at which samples are taken may be selected by the Contractor as the most advantageous for control. However, the Contractor is responsible for delivering fine aggregate to the mixer within specification limits.

b. Corrective Action for Fine Aggregate Grading - When the amount passing on any sieve is outside the specification limits, the fine aggregate shall be immediately resampled and retested. If there is another failure on any sieve, the fact shall immediately be reported to the Contracting Officer.

c. Moisture Content Testing - When in the opinion of the Contracting Officer the electric moisture meter is not operating satisfactorily, there shall be at least four tests for moisture content in accordance with ASTM C 566 during each 8-hour period of mixing plant operation. The times for the tests shall be selected randomly within the 8-hour period. An additional test shall be made whenever the slump is shown to be out of control or excessive variation in workability is reported by the placing foreman. When the electric moisture meter is operating satisfactorily, at least two direct measurements of moisture content shall be made per week to check the calibration of the meter. The results of tests for moisture content shall be used to adjust the added water in the control of the batch plant.

d. Moisture Content Corrective Action - Whenever the moisture content of the fine aggregate changes by 0.5 percent or more, the scale settings for the fine-aggregate batcher and water batcher shall be adjusted (directly or by means of a moisture compensation device) if necessary to maintain the specified slump.

3.7.2.2 Coarse Aggregate

a. Grading - At least once during each shift in which the concrete plant is operating, there shall be a sieve analysis in accordance with ASTM C 136 for each size of coarse aggregate. The location at which samples are taken may be selected by the Contractor as the most advantageous for production control. However, the Contractor shall be responsible for delivering the aggregate to the mixer within specification limits. A test record of samples of aggregate taken at the same locations shall show the results of the current test as well as the average results of the five most recent tests including the current test. The Contractor may adopt limits for control which are coarser than the specification limits for samples taken at locations other than as delivered to the mixer to allow for degradation during handling.

b. Corrective Action for Grading - When the amount passing any sieve is outside the specification limits, the coarse aggregate shall be immediately resampled and retested. If the second sample fails on any sieve, that fact shall be reported to the Contracting Officer. Where two consecutive averages of five tests are outside specification

limits, the operation shall be considered out of control and shall be reported to the Contracting Officer. Concreting shall be stopped and immediate steps shall be taken to correct the grading.

c. Coarse Aggregate Moisture Content - A test for moisture content of each size group of coarse aggregate in accordance with ASTM C 566 shall be made at least twice per week. When two consecutive readings for smallest size coarse aggregate differ by more than 1.0 percent, frequency of testing shall be increased to that specified above for fine aggregate, until the difference falls below 1.0 percent.

d. Coarse Aggregate Moisture Corrective Action - Whenever the moisture content of any size of coarse aggregate changes by 0.5 percent or more, the scale setting for the coarse aggregate batcher and the water batcher shall be adjusted if necessary to maintain the specified slump.

3.7.2.3 Deleterious Substances

a. When in the opinion of the Contracting Officer a problem exists in connection with deleterious substances in fine or coarse aggregates, test shall be made in accordance with ASTM C 33 at a frequency not less than one per week.

b. Deleterious Substances Corrective Action - When the results for a deleterious substance are outside the specification limit, the aggregate shall be resampled and retested for the deleterious substance that failed. If the second sample fails, that fact shall be immediately reported to the Contracting Officer. When material finer than No. 200 sieve for coarse aggregate exceeds the specification limit, immediate steps, such as washing or other corrective actions, shall be initiated.

3.7.2.4 Scales

a. Weighing Accuracy - The accuracy of the scales shall be checked by test weights prior to start of concrete operations and at least once every 3 months for conformance with the applicable requirements of paragraph BATCH PLANT. Such tests shall also be made as directed whenever there are variations in properties of the fresh concrete that could result from batching errors.

b. Batching and Recording Accuracy - Once a week the accuracy of each batching and recording device shall be checked during a weighing operation by noting and recording the required weight, recorded weight, and the actual weight batched. The Contractor shall confirm that the calibration devices described in paragraph BATCH PLANT for checking the accuracy of dispensed admixtures are operating properly.

c. Scales Corrective Action - When either the weighing accuracy or batching accuracy does not comply with specification requirements, the plant shall not be operated until necessary adjustments or repairs have been made. Discrepancies in recording accuracies shall be corrected immediately.

3.7.2.5 Batch-Plant Control

The measurement of all constituent materials including each cementitious material, each size of aggregate, water, and admixtures shall be continuously controlled. The aggregate weights and amount of added water

shall be adjusted as necessary to compensate for free moisture in the aggregates. The amount of air-entraining agent shall be adjusted to control air content within specified limits. A report shall be prepared indicating type and source of each cementitious material used, amount and source of admixtures used, aggregate source, the required aggregate and water weights per cubic yard, amount of water as free moisture in each size of aggregate, and the batch aggregate and water weights per cubic yard for each class of concrete batched during plant operation.

3.7.2.6 Concrete Mixture

a. Air Content Testing - Air content tests shall be made when test specimens are fabricated. In addition, at least two tests for air content shall be made on randomly selected batches of each separate concrete mixture produced during each 8-hour period of concrete production. Additional tests shall be made when excessive variation in workability is reported by the placing foreman or Government quality assurance representative. Tests shall be made in accordance with ASTM C 231. Test results shall be plotted on control charts, which shall at all times be readily available to the Government. Copies of the current control charts shall be kept in the field by the Contractor's quality control representatives and results plotted as tests are made. When a single test result reaches either the upper or lower action limit a second test shall immediately be made. The results of the two tests shall be averaged and this average used as the air content of the batch to plot on both the control chart for air content and the control chart for range, and for determining the need for any remedial action. The result of each test, or average as noted in the previous sentence, shall be plotted on a separate chart for each mixture on which an "average line" is set at the midpoint of the specified air content range from paragraph AIR CONTENT. An upper warning limit and a lower warning limit line shall be set 1.0 percentage point above and below the average line. An upper action limit and a lower action limit line shall be set 1.5 percentage points above and below the average line, respectively. The range between each two consecutive tests shall be plotted on a control chart for range where an upper warning limit is set at 2.0 percentage points and an upper action limit is set at 3.0 percentage points. Samples for air content may be taken at the mixer, however, the Contractor is responsible for delivering the concrete to the placement site at the stipulated air content. If the Contractor's materials or transportation methods cause air content loss between the mixer and the placement, correlation samples shall be taken at the placement site as required by the Contracting Officer and the air content at the mixer controlled as directed.

b. Air Content Corrective Action - Whenever points on the control chart for percent air reach either warning limit, an adjustment shall immediately be made in the amount of air-entraining admixture batched. As soon as is practical after each adjustment, another test shall be made to verify the result of the adjustment. Whenever a point on the control chart range reaches the warning limit, the admixture dispenser shall be recalibrated to ensure that it is operating accurately and with good reproducibility. Whenever a point on either control chart reaches an action limit line, the air content shall be considered out of control and the concreting operation shall immediately be halted until the air content is under control. Additional air content tests shall be made when concreting is restarted. All this shall be at no extra cost to the Government.

c. Slump Testing - In addition to slump tests which shall be made when test specimens are fabricated, at least four slump tests shall be made on randomly selected batches in accordance with ASTM C 143/C 143M for each separate concrete mixture produced during each 8-hour or less period of concrete production each day. Also, additional tests shall be made when excessive variation in workability is reported by the placing foreman or Government's quality assurance representative. Test results shall be plotted on control charts which shall at all times be readily available to the Government. Copies of the current control charts shall be kept in the field by the Contractor's quality control representatives and results plotted as tests are made. When a single slump test reaches or goes beyond either the upper or lower action limit, a second test shall immediately be made on the same batch of concrete. The results of the two tests shall be averaged and this average used as the slump of the batch to plot on both the control chart for percent air and the chart for range, and for determining the need for any remedial action. An upper warning limit shall be set at 1/2 inch below the maximum allowable slump on separate control charts for percent air used for each type of mixture as specified in paragraph SLUMP, and an upper action limit line and lower action limit line shall be set at the maximum and minimum allowable slumps, respectively, as specified in the same paragraph. The range between each consecutive slump test for each type of mixture shall be plotted on a single control chart for range on which an upper action limit is set at 2 inches. Samples for slump shall be taken at the mixer; however, the Contractor is responsible for delivering the concrete to the placement site at the stipulated slump. If the Contractor's materials or transportation methods cause slump loss between mixer and the placement, correlation samples shall be taken at the placement site as required by the Contracting Officer and the slump at the mixer controlled as directed.

d. Slump Corrective Action - Whenever points on the control chart for slump reach the upper warning limit, an adjustment shall be immediately made in the batch weights of water and fine aggregate. The adjustments are to be made so that the total water content does not exceed that amount allowed by the maximum W/CM specified, based upon aggregates which are in a saturated surface-dry condition. When a single slump reaches the upper or lower action limit, no further concrete shall be delivered to the placing site until proper adjustments have been made. Immediately after each adjustment, another test shall be made to verify the correctness of the adjustment. Whenever two consecutive slump tests, made during a period when there was no adjustment of batch weights, produce a point on the control chart for range at or above the upper action limit, the concreting operation shall immediately be halted and the Contractor shall take appropriate steps to bring the slump under control. Also, additional slump tests shall be made as directed. All this shall be at no additional cost to the Government.

e. Temperature - The temperature of the concrete shall be measured when compressive strength specimens are fabricated. Measurement shall be in accordance with ASTM C 1064/C 1064M. The temperature shall be reported along with the compressive strength data.

f. Compressive-Strength Specimens - At least one set of test specimens shall be made each day on each different concrete mixture placed during the day. Additional sets of test cylinders shall be made, as directed by the Contracting Officer, when the mixture proportions are changed or

when low strengths have been detected. A random sampling plan shall be developed by the Contractor and approved by the Contracting Officer prior to the start of construction. The plan shall assure that sampling is done in a completely random and unbiased manner. A set of test specimens for concrete with a 28-day specified strength per paragraph DESIGN REQUIREMENTS shall consist of four cylinders, two to be tested at 7 days and two at 28 days. Test specimens shall be molded and cured in accordance with ASTM C 31/C 31M and tested in accordance with 7 days. All compressive-strength tests shall be reported immediately to the Contracting Officer. Quality control charts shall be kept for individual strength tests, moving average for strength, and moving average for range for each mixture. The charts shall be similar to those found in ACI 214R.

3.7.2.7 Inspection Before Placing

Foundation or construction joints, forms, and embedded items shall be inspected for quality by the Contractor in sufficient time prior to each concrete placement to certify to the Contracting Officer that they are ready to receive concrete. The results of each inspection shall be reported in writing.

3.7.2.8 Placing

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

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

3.7.2.9 Vibrators

a. Vibrator Testing and Use - The frequency and amplitude of each vibrator shall be determined in accordance with COE CRD-C 521 prior to initial use and at least once a month when concrete is being placed. Additional tests shall be made as directed when a vibrator does not appear to be adequately consolidating the concrete. The frequency shall be determined at the same time the vibrator is operating in concrete with the tachometer held against the upper end of the vibrator head while almost submerged and just before the vibrator is withdrawn from the concrete. The amplitude shall be determined with the head vibrating in air. Two measurements shall be taken, one near the tip and another near the upper end of the vibrator head and these results averaged. The make, model, type, and size of the vibrator and frequency and amplitude results shall be reported in writing.

b. Vibrator Corrective Action - Any vibrator not meeting the requirements of paragraph VIBRATORS shall be immediately removed from service and repaired or replaced.

3.7.2.10 Curing

a. Moist-Curing Inspections - At least once each shift, and once per day on non-work days an inspection shall be made of all areas subject to moist curing. The surface moisture condition shall be noted and recorded.

b. Moist-Curing Corrective Action - When a daily inspection report lists an area of inadequate curing, immediate corrective action shall be taken, and the required curing period for such areas shall be extended by 1 day.

c. Membrane-Curing Inspection - No curing compound shall be applied until the Contractor's authorized representative has verified that the compound is properly mixed and ready for spraying. At the end of each operation, he shall estimate the quantity of compound used by measurement of the container and the area of concrete surface covered and compute the rate of coverage in square feet per gallon. He shall note whether or not coverage is uniform.

d. Membrane-Curing Corrective Action - When the coverage rate of the curing compound is less than that specified or when the coverage is not uniform, the entire surface shall be sprayed again.

e. Sheet-Curing Inspection - At least once each shift and once per day on nonwork days, an inspection shall be made of all areas being cured using material sheets. The condition of the covering and the tightness of the laps and tapes shall be noted and recorded.

f. Sheet-Curing Corrective Action - When a daily inspection report lists any tears, holes, or laps or joints that are not completely closed, the tears and holes shall promptly be repaired or the sheets replaced, the joints closed, and the required curing period for those areas shall be extended by 1 day.

3.7.2.11 Cold-Weather Protection and Sealed Insulation Curing

At least once each shift and once per day on non-work days, an inspection shall be made of all areas subject to cold-weather protection. The protection system shall be inspected for holes, tears, unsealed joints, or other deficiencies that could result in damage to the concrete. Special attention shall be taken at edges, corners, and thin sections. Any deficiencies shall be noted, corrected, and reported.

3.7.2.12 Cold-Weather Protection Corrective Action

When a daily inspection report lists any holes, tears, unsealed joints, or other deficiencies, the deficiency shall be corrected immediately and the period of protection extended 1 day.

3.7.2.13 Uniformity of Concrete Mixing

a. Stationary Mixers - Prior to the start of concrete placing and once every 6 months when concrete is being placed, or once for every 75,000 cubic yards of concrete placed, whichever results in the longest time interval, uniformity of concrete mixing shall be determined in accordance with ASTM C 94/C 94M.

b. Truck Mixers - Prior to the start of concrete placing and at least

once every 6 months, uniformity of concrete shall be determined in accordance with ASTM C 94/C 94M. The truck mixers shall be selected randomly for testing. When satisfactory performance is found in one truck mixer, the performance of mixers of substantially the same design and condition of the blades may be regarded as satisfactory.

3.7.2.14 Mixer Uniformity Corrective Action

When a mixer fails to meet mixer uniformity requirements, either the mixer shall be removed from service on the work, the mixing time shall be increased, batching sequence changed, batch size reduced, or adjustments shall be made to the mixer until compliance is achieved.

3.7.3 Reports

All results of tests or inspections conducted shall be reported informally as they are completed and in writing daily. A weekly report shall be prepared for the updating of control charts covering the entire period from the start of the construction season through the current week. During periods of cold-weather protection, reports of pertinent temperatures shall be made daily. These requirements do not relieve the Contractor of the obligation to report certain failures immediately as required in preceding paragraphs. Such reports of failures and the action taken shall be confirmed in writing in the routine reports. The Contracting Officer has the right to examine all test and inspection records.

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METALWORK FABRICATION AND MISCELLANEOUS PROVISIONS

PART 1 GENERAL

1.1 SCOPE

This section specifies general workmanship requirements, applicable to the fabrication, assembly and testing of various items of metalwork and machine work to insure conformance with the specifications. These requirements are in addition to those contained in the specification sections covering the specific items of work or indicated on the drawings.

1.2 MEASUREMENT AND PAYMENT

No separate measurement and payment will be made for the material and work covered under this section and all costs in connection therewith shall be included in the applicable contract price for the items to which the work pertains.

1.3 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.

ASTM INTERNATIONAL (ASTM)

ASTM A 194/A 194M	(2007) Standard Specification for Carbon and Alloy Steel Nuts for Bolts for High-Pressure or High-Temperature Service, or Both
ASTM A 240/A 240M	(2008) Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications
ASTM A 325	(2009) Standard Specification for Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength
ASTM A 36/A 36M	(2008) Standard Specification for Carbon Structural Steel
ASTM A 514/A 514M	(2005) Standard Specification for High-Yield-Strength, Quenched and Tempered Alloy Steel Plate, Suitable for Welding
ASTM A 563	(2007a) Standard Specification for Carbon and Alloy Steel Nuts
ASTM F 436	(2007a) Hardened Steel Washers

ASME INTERNATIONAL (ASME)

ASME BPVC SEC IX	(2007) Boiler and Pressure Vessel Code; Section IX, Welding and Brazing Qualifications

AMERICAN WELDING SOCIETY (AWS)

AWS D1.1/D1.1M	(2008) Structural Welding Code - Steel

RESEARCH COUNCIL ON STRUCTURAL CONNECTIONS (RCSC)

RCSCA.1	Specification for Structural Joints Using ASTM A 325 or ASTM A 490 Bolts

1.4 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 01 33 00 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Shop Drawings; G, RO

Shop drawings shall be submitted for approval in accordance with the Contract Clauses. Drawings shall include catalog cuts, templates, fabrication and assembly details and type, grade and class of materials as appropriate.

Schedule of Welding Procedures; G, RO

A complete schedule of welding procedures as described in paragraph "Welding Procedures" shall be submitted to the Contracting Officer and approved before fabrication commences.

SD-03 Product Data

Materials

The Contractor shall furnish the Contracting Officer 3 copies of all purchase and mill orders, shop orders for materials and work orders, including all new orders placed by Contractors and old orders extended by each supplier. The Contractor, at the time of submittal of shop drawings, shall furnish a list designating the material to be used for each item. Where mill tests are required, purchase orders shall contain the test site address and the name of the testing agency. The Contractor shall also furnish a shipping bill or memorandum of each shipment of finished pieces or members to the project site, giving the designation mark and weight of each piece, the number of pieces, the total weight, and if shipped by rail in carload lots, the car initial and number. Copies of certified shipping bills, in duplicate, shall be mailed promptly to District Engineer, U.S. Army Corps of Engineers, New Orleans, Louisiana 70160-0267.

SD-07 Certificates

Certificates ; G, RO

Certificates for material tests, examinations, and welding procedure and operator qualifications shall be submitted for approval as specified.

1.5 QUALITY CONTROL

1.5.1 Tests of Materials

The Contractor shall, at his expense, perform analyses and tests to demonstrate that all materials are in conformity with the specifications. Should the Contractor desire to use stock materials not manufactured specifically for the work covered by these specifications, he shall submit evidence, satisfactory to the Contracting Officer, that such material conforms to the requirements of the specifications. Detailed tests of these materials will then not be required, if so approved by the Contracting Officer. Tests, except where modified, shall be made as indicated in the respective detailed specifications or on the drawings and, unless otherwise authorized, in the presence of the Contracting Officer. The Contractor shall furnish specimens and samples for additional independent tests and analyses upon request by the Contracting Officer. Specimens and samples shall be properly labeled and prepared for shipment.

1.5.2 Special Test Requirements

1.5.2.1 Nondestructive Testing

When doubt exists as to the soundness of any material part such part may be subjected to any form of nondestructive testing determined by the Contracting Officer. This may include ultrasonic, magnaflux, dye penetrant, x-ray, gamma ray or any other test that will thoroughly investigate the part in question. The cost of such investigation will be borne by the Government. Any defects will be cause for rejection and rejected parts shall be replaced and retested at the Contractor's expense.

1.5.2.2 Tests of Structural Units

Each complete structural unit, as required by other sections of these specifications, shall be erected and tested in the shop in the presence of the Contracting Officer, unless otherwise directed by the Contracting Officer. Waiving of tests, however, will not relieve the Contractor of responsibility for any fault in operation, workmanship or material that occurs before the completion of the contract or guarantee.

1.5.3 Workmanship

Workmanship shall be of the highest grade and in accordance with the best modern practices to conform with the specifications for the item of work being furnished.

1.5.4 Quality Control

The Contractor shall establish and maintain a quality control system to assure compliance with the contract requirements and shall maintain records of all quality control operations covered by these specifications.

PART 2 PRODUCTS

2.1 MATERIALS

2.1.1 General

All nuts shall be equipped with washers where indicated on the shop drawings. Beveled washers shall be used where bearing faces have a slope of more than 1:20 with respect to a plane normal to the bolt axis.

2.1.2 Bolts, Nuts, Screws, and Washers

The finished shank of each bolt shall be long enough to provide full bearing and washers shall be used to provide full grip when the nut is tightened.

2.1.2.1 Bolts

Bolts, including anchor bolts and fitted bolts, shall conform to ASTM A 325. Corrosion-resistant bolts shall conform to ASTM A 325.

2.1.2.2 Nuts

Nuts shall conform to ASTM A 194/A 194M or ASTM A 563.

2.1.2.3 Washers

Washers shall conform to ASTM F 436.

2.1.3 Corrosion-Resistant Steel

Corrosion-resistant steel shall be stainless steel meeting ASTM A 240/A 240M Type 316.

2.1.4 Structural Steel

Structural steel shall conform to ASTM A 36/A 36M.

PART 3 EXECUTION

3.1 STRUCTURAL FABRICATION

3.1.1 Material

Material must be straight before being laid off or worked. If straightening is necessary it shall be done by methods that will not impair the metal. Sharp kinks or bends shall be cause for rejection of the material. Material with welds will not be accepted except, where welding is definitely specified, indicated on the drawings, or otherwise approved. Bends, except for minor details, shall be made by approved dies, press brakes or bending rolls. Where heating is required precautions shall be taken to avoid overheating the metal and it shall be allowed to cool in a manner as not to destroy the original properties of the metal. Flame cutting of material other than structural steel shall be subject to approval and, where proposed, shall be indicated on shop drawings submitted to the Contracting Officer. Shearing shall be accurately done and all portions of the work shall be neatly finished. Corners shall be square and true unless otherwise shown on the drawings. Re-entrant cuts shall be filleted to a minimum radius of 3/4-inch unless otherwise approved.

Finished members shall be free from twists, bends and open joints. Bolts, nuts and screws shall be tight.

3.1.2 Structural Steel Fabrication

Structural steel may be cut by mechanically guided or hand guided torches provided an accurate profile with a smooth surface which is free from cracks and notches is obtained. Surfaces and edges to be welded shall be prepared in accordance with AWS D1.1/D1.1M, Subsection 3.2. Where structural steel is not to be welded, chipping or grinding will not be required except as necessary to remove slag and sharp edges of mechanically guided or hand guided cuts not exposed to view. Hand guided cuts which are to be exposed or visible shall be chipped, ground or machined to sound metal.

3.2 WELDING

3.2.1 Structural Steel

3.2.1.1 General

Unless otherwise authorized or specified, welding of structural steel shall be by an electric arc welding process using a method which excludes the atmosphere from the molten metal. Welding, unless otherwise specified or authorized shall conform to the applicable provisions of AWS D1.1/D1.1M, Sections 1 thru 7, 9, 10 and 11.

3.2.1.2 Welding Equipment

All items of welding equipment shall conform to the requirements of AWS D1.1/D1.1M.

3.2.1.3 Welding Procedures

The Contractor shall prepare for submission to the Contracting Officer a complete schedule of welding procedures which shall consist of detailed procedure specifications for each structure to be welded and tables or diagrams showing the procedure to be used for each required joint. The schedule shall conform to the provisions of AWS D1.1/D1.1M, Sections 2, 3, 4, 7 and 9 and applicable provisions of Section 10, include filler metal requirements, preheat and interpass temperature requirements and any stress relief heat treatment, and show types and locations of welds designated on the drawings and/or in the specifications to receive nondestructive examination. The procedures shall be such as to minimize residual stresses and distortion of the completed weldment. Procedures shall be qualified by tests as prescribed in AWS D1.1/D1.1M, Section 5 except for prequalified procedures described in AWS D1.1/D1.1M, Subsection 5.1. Properly documented evidence of compliance with all requirements of these specifications for previous qualification tests shall establish the joint welding procedure as prequalified. Each procedure shall be clearly identified as being either prequalified or qualified by tests. The test welding and specimen testing must be witnessed and the test report document signed by a representative of the Contracting Officer. The Contractor will be directed or authorized to make any changes in previously approved welding procedures that are deemed necessary or desirable by the Contracting Officer. Approval of any procedure, however, will not relieve the Contractor of the responsibility for producing a finished structure meeting all requirements of these specifications.

3.2.1.4 Qualifications of Welders and Welding Operators

Welding operators, welders, and tack welders shall be qualified and requalified if necessary for the particular type of work to be done. Qualification shall be in accordance with AWS D1.1/D1.1M, Section 5 or ASME BPVC SEC IX.

The Contractor shall certify by name to the Contracting Officer the welders and welding operators so qualified, including the date of qualification, certificates, and code and procedures under which qualified. Prior qualification may be accepted if welders have performed satisfactory work under the code for which qualified within the preceding three months. The Contractor shall require the welder and welding operators to repeat the qualifying tests when, in the opinion of the Contracting Officer, his work indicates a reasonable doubt as to proficiency. In such cases, he shall be recertified, as above, if he successfully passes the retest; otherwise, he shall be disqualified until he has successfully passed a retest. All expenses in connection with qualification and requalification shall be borne by the Contractor.

3.2.1.5 Technique

a. Filler Metal - The electrode, electrode-flux combination and grade of weld metal shall conform to the appropriate AWS specification for the base metal and welding process being used. Only low hydrogen electrodes shall be used for manual shielded metal-arc welding regardless of the thickness of the steel. The AWS designation of the electrodes to be used shall be included in the schedule of welding procedures to be furnished by the Contractor. To maintain low moisture of low hydrogen electrodes, a controlled temperature storage oven shall be used at the job site as prescribed by AWS D1.1/D1.1M, Subsection 4.5.

b. Preheat and Interpass Temperature - Preheating shall be performed as required by AWS D1.1/D1.1M, Subsection 4.2 and 4.3 or as otherwise specified except that the temperature of the base metal shall be at least 70 degrees F. The weldments to be preheated shall be slowly and uniformly heated by approved means to the prescribed temperature, held at that temperature until the welding is completed and then permitted to cool slowly in still air.

c. Stress-Relief Heat Treatment - Where stress relief heat treatment is specified or shown on the drawings, it shall be in accordance with the requirements of AWS D1.1/D1.1M, Subsection 4.4, unless otherwise authorized or directed by the Contracting Officer.

3.2.1.6 Workmanship

a. Preparation of Base Metal - Prior to welding, the Contractor shall inspect surfaces to be welded to assure compliance with AWS D1.1/D1.1M, Subsection 3.2.

b. Temporary Welds - Temporary welds required for fabrication and erection shall be made under the controlled conditions prescribed herein for permanent work. All temporary welds shall be made using low-hydrogen welding electrodes and by welders qualified for permanent work as specified elsewhere in these specifications. Preheat furnished for temporary welds shall be as required by AWS D1.1/D1.1M for permanent welds except that the minimum

temperature shall be 120 degrees F in any case. In making temporary welds, arcs shall not be struck in other than weld locations. Each temporary weld shall be removed after serving its purpose and ground flush with adjacent surfaces.

c. Tack Welds - Tacks welds that are to be incorporated into the permanent work shall be subject to the same quality requirements as the permanent welds. Preheating shall be performed as specified above for temporary welds. Such tack welds shall be cleaned and fused thoroughly with the permanent welds. Multiple-pass tack welds shall have cascaded ends. Defective tack welds shall be removed before permanent welding.

3.2.1.7 Inspection

Welding shall be subject to inspection by the Contracting Officer to determine conformance with the requirements of AWS D1.1/D1.1M, and the approved welding procedures and provisions stated elsewhere in these specifications. The Contracting Officer will require nondestructive examination of designated welds and may require supplemental examination of any joint or coupon cut from any location in any joint. The Contractor shall maintain an approved inspection system and perform required inspections in accordance with the Contract Clause entitled "INSPECTION OF CONSTRUCTION (FAR 52.246-12)".

a. Visual Examination - Prior to any welding, the Contractor shall visually inspect the preparation of material for welding to assure compliance with Section 3 of AWS D1.1/D1.1M. All completed welds shall be cleaned and carefully examined for insufficient throat or leg sizes, cracks, undercutting, overlap, excessive convexity or reinforcement, and other surface defects to insure compliance with the requirements of AWS D1.1/D1.1M, Section 3 and Section 9, Part D. Defects shall be corrected as provided in paragraph "Inspection" (d)

b. Test Coupons - The Government reserves the right to require the Contractor to remove coupons from completed work when doubt as to soundness cannot be resolved by nondestructive examination. Should any two coupons cut from the work of any welder show strengths under test, less than that specified for the base metal it will be considered evidence of negligence or incompetence and such welder shall be removed from the work. When coupons are removed from any part of a structure, the members cut shall be repaired in a neat workman like manner with joints of the proper type to develop the full strength of the members, with peening as approved or directed to relieve residual stress. The expense for removal and testing of the coupons, repair of cut members and the performance of nondestructive examination of repairs shall be assigned to the Government or the Contractor in accordance with the Contract Clause entitled "INSPECTION OF CONSTRUCTION (FAR 52.246-12)".

c. Supplemental Examination - The Government reserves the right to perform supplemental nondestruction examinations as deemed necessary when the soundness of any weld is in doubt and to detect cracking or similar defects that might occur during shipment or erection and before final acceptance by the Government. The cost of such inspection will be borne by the Government. The repairs and the reexamination of repairs will be performed by the

Contractor at no additional cost to the Government.

d. Repairs - Defective weld metal shall be removed by air carbon-arc or oxygen gouging to sound metal. Oxygen gouging shall not be used on ASTM A 514/A 514M steel. The surfaces shall be thoroughly cleaned before welding. The resulting cavities shall be rewelded in compliance with Article 6.6 of AWS D1.1/D1.1M. When deemed necessary by the Contracting Officer, the Contractor shall submit a welding repair plan for approval before repairs are made. Welds that have been repaired shall be retested by the same methods used in the original inspection. All costs of repairs and testing shall be borne by the Contractor, except for repair of members cut to remove test coupons which were found to contain acceptable welds.

e. Oxygen Cutting - In all oxygen cutting, flame shall be so adjusted and manipulated as to avoid cutting beyond the prescribed lines. Cut surfaces and edges shall be left free of slag.

3.3 BOLTED CONNECTIONS

3.3.1 Structural Steel Connections

Bolts, nuts and washers shall be of the type specified or indicated on the drawings. All nuts shall be equipped with washers except for high strength bolts. Beveled washers shall be used where bearing faces have a slope of more than 1:20 with respect to a plane normal to the bolt axis. Where the use of high strength bolts is specified or indicated on the drawings, the materials, workmanship and installation shall conform to the applicable provisions of RCSCA.1.

3.3.1.1 Bolt Holes

Bolt holes shall be accurately located, smooth, perpendicular to the member and cylindrical.

a. Regular Bolt Holes - Holes for regular bolts shall be drilled or subdrilled and reamed in the shop and shall not be more than 1/16-inch larger than the diameter of the bolt.

b. High Strength Bolt Holes - Holes for high strength bolts shall have diameters of not more than 1/16-inch larger than the bolt diameters. If the thickness of the material is not greater than the diameter of the bolts the holes may be punched. If the thickness of the material is greater than the diameter of the bolt, the holes may be drilled full size or subpunched or subdrilled at least 1/8-inch smaller than the diameter of the bolts and then reamed to full size. Poor matching of holes will be cause for rejection. Drifting done during assembly shall not distort the metal or enlarge the holes. For slight mismatching, reaming to a larger diameter of the next standard size bolt will be allowed.

3.4 SHOP ASSEMBLY

Unless otherwise specified, each structural unit furnished shall be assembled in the shop to determine the correctness of the fabrication and matching of the component parts.

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PAINTING: COAL TAR EPOXY SYSTEM

PART 1 GENERAL

1.1 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.

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI Z358.1	(2004) Standard for Emergency Eyewash and Shower Equipment

AMERICAN SOCIETY OF SAFETY ENGINEERS (ASSE/SAFE)

ASSE/SAFE Z87.1	(2003) Standard for Occupational and Educational Eye and Face Protection

ASTM INTERNATIONAL (ASTM)

ASTM D 4417	(2003) Field Measurement of Surface Profile of Blast Cleaned Steel
ASTM D 7091	(2005) Standard Practice for Nondestructive Measurement of Dry Film Thickness of Nonmagnetic Coatings Applied to Ferrous Metals and Nonmagnetic, Nondestructive Coatings Applied to Non-Ferrous Metals
ASTM D 843	(2006) Standard Specification for Nitration Grade Xylene

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 70	(2007; AMD 1 2008) National Electrical Code - 2008 Edition

NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH (NIOSH)

NIOSH 98-119	(1998; 4th Ed) Supplement 2 to NIOSH Manual of Analytical Methods

THE SOCIETY FOR PROTECTIVE COATINGS (SSPC)

SSPC Paint 16	(2006) Paint Specification No. 16 Coal Tar Epoxy-Polyamide Black (or Dark Red) Paint
SSPC SP 1	(1982; E 2004) Solvent Cleaning
SSPC SP 5	(2007) White Metal Blast Cleaning

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1	(2008) Safety -- Safety and Health Requirements

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

29 CFR 1910	Occupational Safety and Health Standards
29 CFR 1910.134	Respiratory Protection
29 CFR 1910.146	Permit-required Confined Spaces
29 CFR 1910.20	Access to Employee Exposure and Medical Records
29 CFR 1910.94	Ventilation
29 CFR 1926	Safety and Health Regulations for Construction
29 CFR 1926.62	Lead
40 CFR 50.6	National Primary and Secondary Ambient Air Quality Standards for PM10
40 CFR 58	Ambient Air Quality Surveillance

1.2 MEASUREMENT AND PAYMENT

1.2.1 Steel H-Piles

No separate measurement or payment will be made for painting steel H-piles. Payment will be included in the contract unit or lump sum prices for which the work is incidental thereto. Price and payment shall constitute full compensation for furnishing all plant, labor, materials and equipment, including compliance with the safety and health provisions, all as specified herein.

1.2.2 Sheet Piling

No separate measurement or payment will be made for painting sheet piling. Payment will be included in the contract unit or lump sum prices for which the work is incidental thereto. Price and payment shall constitute full compensation for furnishing all plant, labor, materials and equipment, including compliance with the safety and health provisions, all as specified herein.

1.2.3 Miscellaneous Metal Surfaces

No separate measurement or payment will be made for painting the miscellaneous metal surfaces. Payment will be included in the contract unit or lump sum prices for which the work is incidental thereto. Price and payment shall constitute full compensation for furnishing all plant, labor, materials and equipment, including compliance with the safety and health provisions, all as specified herein.

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. The following shall be submitted in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-03 Product Data

Safety and Health Provisions; G

An Accident Prevention Plan in accordance with the requirements of Section 01 of EM 385-1-1. The plan shall include, but is not limited to, each of the topic areas listed in Appendix A therein and the specified requirements; each topic shall be developed in a concise manner to include management and operational aspects.

Confined Spaces; G

Detailed written standard operating procedures for confined spaces in accordance with 29 CFR 1910.146 and EM 385-1-1, Section 6I. The procedures shall include:

a. Certificates of calibration for all testing and monitoring equipment. The certificates of calibration shall include: type of equipment, model number, date of calibration, firm conducting calibration, and signature of individual certifying calibration.

b. Methods of inspection of personal protective equipment prior to use.

c. Work practices and other engineering controls designed to reduce airborne hazardous chemical exposures to a minimum.

d. Specification of the design and installation of ventilation systems which shall provide adequate oxygen content and provide for the dilution of paint solvent vapor, lead, and other toxic particulates within the confined space. In addition, the Contractor shall include plans to evaluate the adequacy of air flow patterns.

Respirators; G

A comprehensive written respiratory protection program in accordance with 29 CFR 1910.134, 29 CFR 1926.62, and Section 05.E of EM 385-1-1.

Certified Laboratory; G

An Airborne Sampling Plan detailing the NIOSH 98-119, Factory Mutual, or Underwriters Laboratories approved equipment, equipment calibration procedures, sampling methods, sampling to be performed, and analytical procedures to be used based on the type of work to be performed and anticipated toxic contaminants to be generated. The Contractor shall include the name of the accredited laboratory, listed by the American Industrial Hygiene Association (AIHA), to be used to conduct the analysis of any collected air samples.

Ventilation; G

A plan to provide ventilation assessment.

Medical Status; G

A Medical Surveillance Plan and a statement from the examining physician indicating the name of each employee evaluated and any limitations which will preclude the employee from performing the work required. The statement shall include the date of the medical evaluation, the physician's name, signature, and telephone number.

PM-10 Monitoring; G

A plan for monitoring emissions of particulate matter 10 microns or less in size (PM-10). The plan shall comply with the requirements of EPA regulation 40 CFR 50.6 and paragraph PM-10 Monitoring. The plan shall also include provisions for halting work and correcting the containment in the event unacceptable emissions occur.

SD-04 Samples

Special Paint Formulas; G
Paint Formulations; G

Samples of all special paint formula, Military, Master Painter Institute, Commercial Item Description, and SSPC paints. For products that are specified to be applied in accordance with the manufacturer's recommendations the Contractor shall also submit the paint producers product data sheet or other written instructions for those products.

Solvent and Thinners; G

Samples of the thinners or solvents used to reduce the viscosity of the paint.

SD-06 Test Reports

PM-10 Monitoring; G

Reports of the PM-10 monitoring tests.

Certified Laboratory; G

Reports of airborne sampling tests.

Inspection; G

Records of inspections and operations performed. Submittals shall be made on a daily basis.

SD-07 Certificates

Qualifications; G

Certification for all job sites. Submittal of the qualifications and experience of any additional qualified and competent persons employed to provide on-site environmental, safety, and health shall also be provided. Acceptance of this submission must be obtained prior to the submission of other required environmental, safety, and health submittal items.

Coating Thickness Gage Qualification; G

Documentation of manufacturer's certification shall be submitted for all coating thickness gages.

1.4 QUALIFICATIONS

Qualifications and experience shall comply with the following.

1.4.1 Certified Professional

The Contractor shall utilize a qualified and competent person as defined in Section 01 of EM 385-1-1 to develop the required safety and health submittal and to provide on-site safety and health services during the contract period. The person shall be a Certified Industrial Hygienist (CIH), an Industrial Hygienist (IH), or a Certified Safety Professional (CSP) with a minimum of 3 years of demonstrated experience in similar related work. The Contractor shall certify that the Certified Industrial Hygienist (CIH) holds current and valid certification from the American Board of Industrial Hygiene (ABIH), that the IH is considered board eligible by written confirmation from the ABIH, or that the CSP holds current and valid certification from the American Board of Certified Safety Professionals. The CIH, IH, or CSP may utilize other qualified and competent persons, as defined in EM 385-1-1, to conduct on-site safety and health activities as long as these persons have a minimum of 2 years of demonstrated experience in similar related work and are under the direct supervision of the CIH, IH, or CSP. For lead containing jobsites, the competent and qualified person shall have successfully completed an EPA or state accredited lead-based paint abatement Supervisor course specific to the work to be performed and shall possess current and valid state and/or local government certification, as required.

1.4.2 Coating Thickness Gage Qualification

Documentation of certification shall be submitted for all coating thickness gages. Magnetic flux thickness gages as described in ASTM D 7091 shall be used to make all coating thickness measurements on ferrous metal substrates. Gages shall have an accuracy of +/- 3 percent or better. Gages to be used on the job shall be certified by the manufacturer as meeting these requirements.

1.5 SAMPLING AND TESTING

The Contractor shall allow at least 30 days for sampling and testing. Sampling may be at the jobsite or source of supply. The Contractor shall notify the Contracting Officer when the paint and thinner are available for sampling. Sampling of each batch shall be witnessed by the Contracting Officer unless otherwise specified or directed. A 1-quart sample of paint and thinner shall be submitted for each batch proposed for use. The sample shall be labeled to indicate formula or specification number and nomenclature, batch number, batch quantity, color, date made, and applicable project contract number. Testing will be performed by the

Government. Costs for retesting rejected material will be deducted from payments to the Contractor at the rate of $300.00 dollars for each sample retested.

1.6 SAFETY AND HEALTH PROVISIONS

Work shall be performed in accordance with the requirements of 29 CFR 1910, 29 CFR 1926, EM 385-1-1, and other references as listed herein. Matters of interpretation of the standards shall be submitted to the Contracting Officer for resolution before starting work. Where the regulations conflict, the most stringent requirements shall apply. Paragraph SAFETY AND HEALTH PROVISIONS supplements the requirements of EM 385-1-1, paragraph (1). In any conflict between Section 01 of EM 385-1-1 and this paragraph, the provisions herein shall govern.

1.6.1 Abrasive Blasting

The Contractor shall comply with the requirements in Section 06.H of EM 385-1-1.

1.6.1.1 Hoses And Nozzles

In addition to the requirements in Section 20 of EM 385-1-1, hoses and hose connections of a type to prevent shock from static electricity shall be used. Hose lengths shall be joined together by approved couplings of a material and type designed to prevent erosion and weakening of the couplings. The couplings and nozzle attachments shall fit on the outside of the hose and shall be designed to prevent accidental disengagement.

1.6.1.2 Workers Other Than Blasters

Workers other than blasting operators working in close proximity to abrasive blasting operations shall be protected by utilizing MSHA/NIOSH-approved half-face or full-face air purifying respirators equipped with high-efficiency particulate air (HEPA) filters, eye protection meeting or exceeding ASSE/SAFE Z87.1 and hearing protectors (ear plugs and/or ear muffs) providing a noise reduction rating of at least 20 dBA or as needed to provide adequate protection.

1.6.2 Cleaning with Compressed Air

Cleaning with compressed air shall be in accordance with Section 20.B.5 of EM 385-1-1 and personnel shall be protected as specified in 29 CFR 1910.134.

1.6.3 Cleaning with Solvents

1.6.3.1 Ventilation

Ventilation shall be provided where required by 29 CFR 1910.146 or where the concentration of solvent vapors exceeds 10 percent of the Lower Explosive Limit (LEL). Ventilation shall be in accordance with 29 CFR 1910.94, paragraph (c)(5).

1.6.3.2 Personal Protective Equipment

Personal protective equipment shall be provided where required by 29 CFR 1910.146 and in accordance with 29 CFR 1910, Subpart I.

1.6.4 Mixing Epoxy and Polyurethane Resin Formulations

1.6.4.1 Exhaust Ventilation

Local exhaust ventilation shall be provided in the area where the curing agent and resin are mixed. This ventilation system shall be capable of providing at least 100 linear fpm of capture velocity measured at the point where the curing agent and resin contact during mixing.

1.6.4.2 Personal Protective Equipment

Exposure of skin and eyes to epoxy resin components shall be avoided by wearing appropriate chemically resistant gloves, apron, safety goggles, and face shields meeting or exceeding the requirements of ASSE/SAFE Z87.1.

1.6.4.3 Medical Precautions

Individuals who have a history of sensitivity to epoxy or polyurethane resin systems shall be medically evaluated before any exposure can occur. Individuals who are medically evaluated as exhibiting a sensitivity to epoxy resins shall not conduct work tasks or otherwise be exposed to such chemicals. Individuals who develop a sensitivity shall be immediately removed from further exposure and medically evaluated.

1.6.4.4 Emergency Equipment

A combination unit, comprised of an eyewash and deluge shower, within close proximity to the epoxy or polyurethane resin mixing operation shall be provided in accordance with ANSI Z358.1, paragraph (9).

1.6.5 Paint Application

1.6.5.1 Ventilation

When using solvent-based paint in confined spaces, ventilation shall be provided to exchange air in the space at a minimum rate of 5,000 cubic feet per minute per spray gun in operation. It may be necessary to install both a mechanical supply and exhaust ventilation system to effect adequate air changes within the confined space. All air-moving devices shall be located and affixed to an opening of the confined space in a manner that assures that the airflow is not restricted or short circuited and is supplied in the proper direction. Means of egress shall not be blocked. Ventilation shall be continued after completion of painting and through the drying phase of the operation. If the ventilation system fails or the concentration of volatiles exceeds 10 percent of the LEL (except in the zone immediately adjacent to the spray nozzle), painting shall be stopped and spaces evacuated until such time that adequate ventilation is provided. An audible alarm that signals system failure shall be an integral part of the ventilation system. The effectiveness of the ventilation shall be checked by using ventilation smoke tubes and making frequent oxygen and combustible gas readings during painting operations. Exhaust ducts shall discharge clear of the working areas and away from possible sources of ignition.

1.6.5.2 Explosion Proof Equipment

Electrical wiring, lights, and other equipment located in the paint spraying area shall be of the explosion proof type designed for operation in Class I, Division 1, Group D, hazardous locations as required by the

NFPA 70. Electrical wiring, motors, and other equipment, outside of but within 20 feet of any spraying area, shall not spark and shall conform to the provisions for Class I, Division 2, Group D, hazardous locations. Electric motors used to drive exhaust fans shall not be placed inside spraying areas or ducts. Fan blades and portable air ducts shall be constructed of nonferrous materials. Motors and associated control equipment shall be properly maintained and grounded. The metallic parts of air-moving devices, spray guns, connecting tubing, and duct work shall be electrically bonded and the bonded assembly shall be grounded.

1.6.5.3 Further Precautions

a. Workers shall wear nonsparking safety shoes.

b. Solvent drums taken into the spraying area shall be placed on nonferrous surfaces and shall be grounded. Metallic bonding shall be maintained between containers and drums when materials are being transferred.

c. Insulation on all power and lighting cables shall be inspected to ensure that the insulation is in excellent working condition and is free of all cracks and worn spots. Cables shall be further inspected to ensure that no connections are within 50 feet of the operation, that lines are not overloaded, and that they are suspended with sufficient slack to prevent undue stress or chafing.

1.6.5.4 Ignition Sources

Ignition sources, to include lighted cigarettes, cigars, pipes, matches, or cigarette lighters shall be prohibited in area of solvent cleaning, paint storage, paint mixing, or paint application.

1.6.6 Health Protection

1.6.6.1 Air Sampling

The Contractor shall perform air sampling and testing as needed to assure that workers are not exposed to contaminants above the permissible exposure limit. In addition, the Contractor shall provide the Contracting Officer with a copy of the test results from the laboratory within five working days of the sampling date and shall provide results from direct-reading instrumentation on the same day the samples are collected.

1.6.6.2 Respirators

During all spray painting operations, spray painters shall use approved SCBA or SAR (air line) respirators, unless valid air sampling has demonstrated contaminant levels to be consistently within concentrations that are compatible with air-purifying respirator Assigned Protection Factor (APF). Persons with facial hair that interferes with the sealing surface of the facepiece to faceseal or interferes with respirator valve function shall not be allowed to perform work requiring respiratory protection. Air-purifying chemical cartridge/canister half- or full-facepiece respirators that have a particulate prefilter and are suitable for the specific type(s) of gas/vapor and particulate contaminant(s) may be used for nonconfined space painting, mixing, and cleaning (using solvents). These respirators may be used provided the measured or anticipated concentration of the contaminant(s) in the breathing zone of the exposed worker does not exceed the APF for the

respirator and the gas/vapor has good warning properties or the respirator assembly is equipped with a NIOSH-approved end of service life indicator for the gas(es)/vapor anticipated or encountered. Where paint contains toxic elements such as lead, cadmium, chromium, or other toxic particulates that may become airborne during painting in nonconfined spaces, air-purifying half- and full-facepiece respirators or powered air-purifying respirators equipped with appropriate gas vapor cartridges, in combination with a high-efficiency filter, or an appropriate canister incorporating a high-efficiency filter, shall be used.

1.6.6.3 Protective Clothing and Equipment

All workers shall wear safety shoes or boots, appropriate gloves to protect against the chemical to be encountered, and breathable, protective, full-body covering during spray-painting applications. Where necessary for emergencies, protective equipment such as life lines, body harnesses, or other means of personnel removal shall be used during confined-space work.

1.7 MEDICAL STATUS

Prior to the start of work and annually thereafter, all Contractor employees working with or around paint systems, thinners, blast media, those required to wear respiratory protective equipment, and those who will be exposed to high noise levels shall be medically evaluated for the particular type of exposure they may encounter. Medical records shall be maintained as required by 29 CFR 1910.20. The evaluation shall include:

a. Audiometric testing and evaluation of employees who will work in a noise environment with a time weighted average greater than or equal to 90 dBA.

b. Vision screening (employees who use full-facepiece respirators shall not wear contact lenses).

c. Medical evaluation shall include, but shall not be limited to, the following:

(1) Medical history including, but not limited to, alcohol use, with emphasis on liver, kidney, and pulmonary systems, and sensitivity to chemicals to be used on the job.

(2) General physical examination with emphasis on liver, kidney, and pulmonary system.

(3) Determination of the employee's physical and psychological ability to wear respiratory protective equipment and to perform job-related tasks.

(4) Determination of baseline values of biological indices for later comparison to changes associated with exposure to paint systems and thinners or blast media, which include: liver function tests to include SGOT, SGPT, GGPT, alkaline phosphates, bilirubin, complete urinalysis, EKG (employees over age 40), blood urea nitrogen (bun), serum creatinine, pulmonary function test, FVC, and FEV, chest x-ray (if medically indicated), blood lead and ZPP (for individuals where it is known there will be an exposure to materials containing lead), other criteria that may be deemed necessary by the Contractor's physician, and Physician's statements for individual employees that medical status would

permit specific task performance.

1.8 CHANGE IN MEDICAL STATUS

Any employee whose medical status has changed negatively due to work related chemical and/or physical agent exposure while working with or around paint systems and thinners, blast media, or other chemicals shall be evaluated by a physician, and the Contractor shall obtain a physicians statement as described in paragraph MEDICAL STATUS prior to allowing the employee to return to those work tasks. The Contractor shall notify the Contracting Officer in writing of any negative changes in employee medical status and the results of the physicians reevaluation statement.

1.9 ENVIRONMENTAL PROTECTION

In addition to the requirements of Section 01 57 23.00 12 STORM WATER POLLUTION PREVENTION MEASURES the Contractor shall comply with the following environmental protection criteria.

1.9.1 Waste Classification, Handling, and Disposal

The Contractor shall be responsible for assuring the proper disposal of all hazardous and nonhazardous waste generated during the project. Nonhazardous waste shall be stored in closed containers separate from hazardous waste storage areas. All nonhazardous waste shall be transported in accordance with local regulations regarding waste transportation.

1.9.2 Air Quality Monitoring

1.9.2.1 PM-10 Monitoring

The Contractor shall perform PM-10 monitoring. The positioning of air monitoring equipment shall be in accordance with 40 CFR 58, App E, Subpart (8). In addition, a minimum of two PM-10 monitors shall be used at the project site, one down wind from the project and one in the area of greatest public access (e.g., playground, school yard, or homeowner's yard). When the project is in an area where there are critical receptors nearby, monitoring shall be conducted throughout the entire period that abrasive blasting and cleanup operations are performed. Otherwise, monitoring shall be performed 4 of the first 8 days and on a regular basis thereafter for a sum total of 25 percent of the time surface preparation and debris cleanup are performed. Failure to meet air quality regulatory limits shall require air monitoring to be repeated immediately after corrective actions have been taken. The Contractor shall also conduct preproject PM-10 monitoring. The preproject PM-10 monitoring shall be conducted a minimum of 2 weeks prior to the beginning of the project. The monitoring shall continue for a minimum of 3 days to establish background levels. A report of the results shall be submitted to the Contracting Officer within 48 hours and shall include:

(1) Name and location of jobsite.

(2) Date of monitoring.

(3) Time of monitoring (i.e., time monitoring begins and ends each day).

(4) Identification and serial number of monitoring units.

(5) Drawing showing specific location of monitoring units.

(6) Drawing showing specific location of paint removal operation and the method of removal or work activity being performed.

(7) Wind direction and velocity.

(8) A flow chart verifying the rate of air flow across the filter throughout the sampling period.

(9) Name and address of laboratory.

(10) Laboratory test procedure.

(11) Laboratory test results.

(12) Signatures of field and laboratory technicians conducting the work.

1.10 PAINT PACKAGING, DELIVERY, AND STORAGE

Paints shall be processed and packaged to ensure that within a period of one year from date of manufacture, they will not gel, liver, or thicken deleteriously, or form gas in the closed container. Paints, unless otherwise specified or permitted, shall be packaged in standard containers not larger than 5 gallons, with removable friction or lug-type covers. Each container of paint or separately packaged component thereof shall be labeled to indicate the purchaser's order number, date of manufacture, manufacturer's batch number, quantity, color, component identification and designated name, and formula or specification number of the paint together with special labeling instructions, when specified. Paint shall be delivered to the job in unbroken containers. Paints that can be harmed by exposure to cold weather shall be stored in ventilated, heated shelters. All paints shall be stored under cover from the elements and in locations free from sparks and flames.

PART 2 PRODUCTS

2.1 SPECIAL PAINT FORMULAS

Special paints shall have the composition as indicated in the formulas listed herein. Where so specified, certain components of a paint formulation shall be packaged in separate containers for mixing on the job. If not specified or otherwise prescribed, the color shall be that naturally obtained from the required pigmentation.

2.2 PAINT FORMULATIONS

Special paint formulas shall comply with the following:

2.2.1 Formula C-200a, Coal Tar-Epoxy (Black) Paint

The paint shall conform to SSPC Paint 16 manufactured with Type 1 pitch. In addition to standard labeling, container labels shall include the term, Corps of Engineers Formula C-200a.

2.3 INGREDIENTS FOR SPECIAL PAINT FORMULAS

Xylene shall conform to ASTM D 843.

2.4 TESTING

Chromatographic analysis solvents in epoxy paints and thinners shall be subject to analysis by programmed termperature gas chromatographic methods and/or spectrophotometric methods, employing the same techniques that give reproducible results on prepared control samples known to meet the specifications. If the solvent being analyzed is of the type consisting primarily of a single chemical compound or a mixture of 2 or more such solvents, interpretation of the test results shall take cognizance of the degree of purity of the individual solvents as commercially produced for the paint industry.

PART 3 EXECUTION

3.1 CLEANING AND PREPARATION OF SURFACES TO BE PAINTED

3.1.1 General Requirements

Surfaces to be painted shall be cleaned before applying paint or surface treatments. Deposits of grease or oil shall be removed in accordance with SSPC SP 1, prior to mechanical cleaning. Solvent cleaning shall be accomplished with mineral spirits or other low toxicity solvents having a flash point above 100 degrees F. Clean cloths and clean fluids shall be used to avoid leaving a thin film of greasy residue on the surfaces being cleaned. Items not to be prepared or coated shall be protected from damage by the surface preparation methods. Machinery shall be protected against entry of blast abrasive and dust into working parts. Cleaning and painting shall be so programmed that dust or other contaminants from the cleaning process do not fall on wet, newly painted surfaces, and surfaces not intended to be painted shall be suitably protected from the effects of cleaning and painting operations. Welding of, or in the vicinity of, previously painted surfaces shall be conducted in a manner to prevent weld spatter from striking the paint and to otherwise reduce coating damage to a minimum; paint damaged by welding operations shall be restored to original condition. Surfaces to be painted that will be inaccessible after construction, erection, or installation operations are completed shall be painted before they become inaccessible.

3.1.2 Ferrous Surfaces Subject to Severe Exposure

Ferrous surfaces subject to extended periods of immersion or as otherwise required shall be dry blast cleaned to SSPC SP 5. The blast profile, unless otherwise specified, shall be 1.5 to 2.5 mils as measured by ASTM D 4417, Method C. Appropriate abrasive blast media shall be used to produce the desired surface profile and to give an angular anchor tooth pattern. If recycled blast media is used, an appropriate particle size distribution shall be maintained so that the specified profile is consistently obtained. Steel shot or other abrasives that do not produce an angular profile shall not be used. Weld spatter not dislodged by blasting shall be removed with impact or grinding tools and the areas reblasted prior to painting. Surfaces shall be dry at the time of blasting. Blast cleaning to SSPC SP 5 shall be done in the field and, unless otherwise specifically authorized, after final erection. Within 8 hours after cleaning, prior to the deposition of any detectable moisture, contaminants, or corrosion, all ferrous surfaces blast cleaned to SSPC SP 5 shall be cleaned of dust and abrasive particles by brush, vacuum cleamer, and/or blown down with clean, dry, compressed air, and given the first coat of paint. All abrasives used in sandblasting operations shall contain less

than 1 percent silica, unless approved in writing by the Contracting Officer.

3.2 PAINT APPLICATION

3.2.1 General

The finished coating shall be free from holidays, pinholes, bubbles, runs, drops, ridges, waves, laps, excessive or unsightly brush marks, and variations in color, texture, and gloss. Application of initial or subsequent coatings shall not commence until the Contracting Officer has verified that atmospheric conditions and the surfaces to be coated are satisfactory. Each paint coat shall be applied in a manner that will produce an even, continuous film of uniform thickness. Edges, corners, crevices, seams, joints, welds, rivets, corrosion pits, and other surface irregularities shall receive special attention to ensure that they receive an adequate thickness of paint. Spray equipment shall be equipped with traps and separators and where appropriate, mechanical agitators, pressure gauges, pressure regulators, and screens or filters. Air caps, nozzles, and needles shall be as recommended by the spray equipment manufacturer for the material being applied. Airless-type spray equipment may be used only on broad, flat, or otherwise simply configured surfaces, except that it may be employed for general painting if the spray gun is equipped with dual or adjustable tips of proper types and orifice sizes. Airless-type equipment shall not be used for the application of vinyl paints.

3.2.2 Mixing and Thinning

Paints shall be thoroughly mixed, strained where necessary, and kept at a uniform composition and consistency during application. Paste or dry-powder pigments specified to be added at the time of use shall, with the aid of powered stirrers, be incorporated into the vehicle or base paint in a manner that will produce a smooth, homogeneous mixture free of lumps and dry particles. Where necessary to suit conditions of the surface temperature, weather, and method of application, the paint may be thinned immediately prior to use. Thinning shall generally be limited to the addition of not more than 1 pint per gallon of the proper thinner; this general limitation shall not apply when more specific thinning instructions are provided. Paint that has been stored at low temperature, shall be brought up to at least 70 degrees F before being mixed and thinned, and its temperature in the spray tank or other working container shall not fall below 60 degrees F during the application. Paint that has deteriorated in any manner to a degree that it cannot be restored to essentially its original condition by customary field-mixing methods shall not be used and shall be removed from the project site. Paint and thinner that is more than 1 year old shall be resampled and resubmitted for testing to determine its suitability for application.

3.2.3 Atmospheric and Surface Conditions

Paint shall be applied only to surfaces that are above the dew point temperature and that are completely free of moisture as determined by sight and touch. Paint shall not be applied to surfaces upon which there is detectable frost or ice. Except as otherwise specified, the temperature of the surfaces to be painted and of air in contact therewith shall be not less than 45 degrees F during paint application nor shall paint be applied if the surfaces can be expected to drop to 32 degrees F or lower before the film has dried to a reasonably firm condition. During periods of inclement weather, painting may be continued by enclosing the surfaces and applying

artificial heat, provided the minimum temperatures and surface dryness requirements prescribed previously are maintained. Paint shall not be applied to surfaces heated by direct sunlight or other sources to temperatures that will cause detrimental blistering, pinholing, or porosity of the film.

3.2.4 Time Between Surface Preparation and Painting

Surfaces that have been cleaned and/or otherwise prepared for painting shall be primed as soon as practicable after such preparation has been completed but, in any event, prior to any deterioration of the prepared surface.

3.2.5 Method of Paint Application

Unless otherwise specified, paint shall be applied by brush or spray to ferrous and nonferrous metal surfaces. Special attention shall be directed toward ensuring adequate coverage of edges, corners, crevices, pits, rivets, bolts, welds, and similar surface irregularities. Other methods of application to metal surfaces shall be subject to the specific approval of the Contracting Officer. Paint on plaster, concrete, or other nonmetallic surfaces shall be applied by brush, roller, and/or spray.

3.2.6 Coverage and Film Thickness

Film thickness or spreading rates shall be as specified hereinafter. Where no spreading rate is specified, the paint shall be applied at a rate normal for the type of material being used. In any event, the combined coats of a specified paint system shall completely hide base surface and the finish coats shall completely hide undercoats of dissimilar color.

3.2.6.1 Measurement on Ferrous Metal

Where dry film thickness requirements are specified for coatings on ferrous surfaces, measurements shall be made with a gage qualified in accordance with paragraph Coating Thickness Gage Qualification. They shall be calibrated and used in accordance with ASTM D 7091. They shall be calibrated using plastic shims with metal practically identical in composition and surface preparation to that being coated, and of substantially the same thickness (except that for measurements on metal thicker than 1/4 inch, the instrument may be calibrated on metal with a minimum thickness of 1/4 inch). Frequency of measurements shall be as recommended for field measurements by ASTM D 7091 and reported as the mean for each spot determination. The instruments shall be calibrated or calibration verified prior to, during, and after each use.

3.2.7 Progress of Painting Work

Where field painting on any type of surface has commenced, the complete painting operation, including priming and finishing coats, on that portion of the work shall be completed as soon as practicable, without prolonged delays. Sufficient time shall elapse between successive coats to permit them to dry properly for recoating, and this period shall be modified as necessary to suit adverse weather conditions. Paint shall be considered dry for recoating when it feels firm, does not deform or feel sticky under moderate pressure of the finger, and the application of another coat of paint does not cause film irregularities such as lifting or loss of adhesion of the undercoat. All coats of all painted surfaces shall be unscarred and completely integral at the time of application of succeeding

coats. At the time of application of each successive coat, undercoats shall be cleaned of dust, grease, overspray, or foreign matter by means of airblast, solvent cleaning, or other suitable means. Cement and mortar deposits on painted steel surfaces, not satisfactorily removed by ordinary cleaning methods, shall be brush-off blast cleaned and completely repainted as required. Undercoats of high gloss shall, if necessary for establishment of good adhesion, be scuff sanded, solvent wiped, or otherwise treated prior to application of a succeeding coat. Field coats on metal shall be applied after erection except as otherwise specified and except for surfaces to be painted that will become inaccessible after erection.

3.2.8 Contacting Surfaces

When riveted or ordinary bolted contact is to exist between surfaces of ferrous or other metal parts of substantially similar chemical composition, such surfaces will not be required to be painted, but any resulting crevices shall subsequently be filled or sealed with paint. Contacting metal surfaces formed by high-strength bolts in friction-type connections shall not be painted. Where a nonmetal surface is to be in riveted or bolted contact with a metal surface, the contacting surfaces of the metal shall be cleaned and given three coats of the specified primer. Unless otherwise specified, corrosion-resisting metal surfaces, including cladding therewith, shall not be painted.

3.2.9 Drying Time Prior to Immersion

Minimum drying periods after final coat prior to immersion shall be at least 7 days. Minimum drying periods shall be increased twofold if the drying temperature is below 65 degrees F and/or if the immersion exposure involves considerable abrasion.

3.2.10 Protection of Painted Surfaces

Where shelter and/or heat are provided for painted surfaces during inclement weather, such protective measures shall be maintained until the paint film has dried and discontinuance of the measures is authorized. Items that have been painted shall not be handled, worked on, or otherwise disturbed until the paint coat is fully dry and hard. All metalwork coated in the shop or field prior to final erection shall be stored out of contact with the ground in a manner and location that will minimize the formation of water-holding pockets; soiling, contamination, and deterioration of the paint film, and damaged areas of paint on such metalwork shall be cleaned and touched up without delay. The first field coat of paint shall be applied within a reasonable period of time after the shop coat and in any event before weathering of the shop coat becomes extensive.

3.2.11 Coal Tar-Epoxy (Black) Paint (Formula C-200a)

3.2.11.1 Mixing

Component B shall be added to previously stirred Component A and thoroughly mixed together with a heavy-duty mechanical stirrer just prior to use. The use of not more than 1 pint of xylene thinner per 1 gallon of paint will be permitted to improve application properties and extend pot life. The pot life of the mixed paint, extended by permissible thinning, may vary from 2 hours in very warm weather to 5 or more hours in cool weather. Pot life in warm weather may be extended by precooling the components prior to mixing; cooling the mixed material; and/or by slow, continuous stirring during the

application period. The mixed material shall be applied before unreasonable increases in viscosity take place.

3.2.11.2 Application

Spray guns shall be of the conventional type equipped with a fluid tip of approximately 0.09 inch in diameter and external atomization, seven-hole air cap. Material shall be supplied to the spray gun from a bottom withdrawal pot or by means of a fluid pump; hose shall be 1/2 inch in diameter. Atomization air pressure shall not be less than 80 psi. High-pressure airless spray equipment may be used only on broad, simply configured surfaces. Brush application shall be with a stiff-bristled tool heavily laden with material and wielded in a manner to spread the coating smoothly and quickly without excessive brushing. The coverage rate of the material is approximately 110 square feet/gallon per coat to obtain 20 mils (dry thickness) in a two-coat system. The paint shall flow together and provide a coherent, pinhole-free film. The direction of the spray passes (or finish strokes if brushed) of the second coat shall be at right angles to those of the first where practicable.

3.2.11.3 Subsequent Coats

Except at the high temperatures discussed later in this paragraph, the drying time between coal tar-epoxy coats shall not be more than 72 hours, and application of a subsequent coat as soon as the undercoat is reasonably firm is strongly encouraged. Where the temperature for substrate or coating surfaces during application or curing exceeds or can be expected to exceed 125 degrees F as the result of direct exposure to sunlight, the surfaces shall be shaded by overhead cover or the interval between coats shall be reduced as may be found necessary to avoid poor intercoat adhesion. Here, poor intercoat adhesion is defined as the inability of two or more dried coats of coal tar-epoxy paint to resist delamination when tested aggressively with a sharp knife. Under the most extreme conditions involving high ambient temperatures and sun-exposed surfaces, the drying time between coats shall not exceed 10 hours, and the reduction of this interval to a few hours or less is strongly encouraged. Where the curing time of a coal tar-epoxy undercoat exceeds 72 hours of curing at normal temperatures, 10 hours at extreme conditions, or where the undercoat develops a heavy blush, it shall be given one of the following treatments before the subsequent coat is applied:

a. Etch the coating surface lightly by brush-off blasting, using fine sand, low air pressure, and a nozzle-to-surface distance of approximately 3 feet.

b. Remove the blush and/or soften the surface of the coating by wiping it with cloths dampened with 1-methyl-2-pyrrolidone. The solvents may be applied to the surface by fog spraying followed by wiping, but any puddles of solvent must be mopped up immediately after they form. The subsequent coat shall be applied in not less than 15 minutes or more than 3 hours after the solvent treatment.

3.2.11.4 Ambient Temperature

Coal tar-epoxy paint shall not be applied when the receiving surface or the ambient air is below 50 degrees F nor unless it can be reasonably anticipated that the average ambient temperature will be 50 degrees F or higher for the 5-day period subsequent to the application of any coat.

3.2.11.5 Safety

In addition to the safety provisions in paragraph SAFETY AND HEALTH PROVISIONS, other workmen as well as painters shall avoid inhaling atomized particles of coal tar-epoxy paint and contact of the paint with the skin.

3.3 PAINT SYSTEMS APPLICATION

The required paint systems and the surfaces to which they shall be applied are shown in this paragraph, and/or in the drawings. Supplementary information follows.

3.3.1 Fabricated and Assembled Items

Items that have been fabricated and/or assembled into essentially their final form and that are customarily cleaned and painted in accordance with the manufacturer's standard practice will be exempted from equivalent surface preparation and painting requirements described herein, provided that:

a. Surfaces primed (only) in accordance with such standard practices are compatible with specified field-applied finish coats.

b. Surfaces that have been primed and finish painted in accordance with the manufacturer's standard practice are of acceptable color and are capable of being satisfactorily touched up in the field.

c. Items expressly designated herein to be cleaned and painted in a specified manner are not coated in accordance with the manufacturer's standard practice if different from that specified herein.

3.3.2 Surface Preparation

The method of surface preparation and pretreatment shown in the tabulation of paint systems is for identification purposes only. Cleaning and pretreatment of surfaces prior to painting shall be accomplished in accordance with detailed requirements previously described.

3.3.3 System No. 6

Paint shall be spray or brush applied with a minimum of two coats to provide a minimum total thickness at any point of 16 mils. The specified film thickness shall be attained in any event, and any additional (beyond two) coats needed to attain specified thickness shall be applied at no additional cost to the Government.

3.3.4 Protection of Nonpainted Items and Cleanup

Walls, equipment, fixtures and all other items in the vicinity of the surfaces being painted shall be maintained free from damage by paint or painting activities. Paint spillage and painting activity damage shall be promptly repaired.

3.4 INSPECTION

The Contractor shall inspect, document, and report all work phases and operations on a daily basis. As a minimum the daily report shall contain the following:

a. Inspections performed, including the area of the structure involved and the results of the inspection.

b. Surface preparation operations performed, including the area of the structure involved, the mode of preparation, the kinds of solvent, abrasive, or power tools employed, and whether contract requirements were met.

c. Thinning operations performed, including thinners used, batch numbers, and thinner/paint volume ratios.

d. Application operations performed, including the area of the structure involved, mode of application employed, ambient temperature, substrate temperature, dew point, relative humidity, type of paint with batch numbers, elapsed time between surface preparation and application, elapsed time for recoat, condition of underlying coat, number of coats applied, and if specified, measured dry film thickness or spreading rate of each new coating.

3.5 PAINTING SCHEDULES

SYSTEM NO. 6

Items or surfaces to be coated: Miscellaneous metal surfaces, Sheet piles and H-piles shall be painted between 3 inches above the top of the stabilization slab for a minimum linear distance of 10 feet on all surfaces, unless otherwise noted on the drawings.

SURFACE PREPARATION	1st COAT	2nd COAT	3rd COAT
White metal blast cleaning	Coal tar-epoxy C-200a (black)	Coal tar-epoxy C-200a (black)	Coal tar-epoxy C-200a (black) (if needed to attain required thickness)

-- End of Section --

Note: All references herein to Section 09940 is hereby changed to reference the applicable painting specification used in this contract.

DEPARTMENT OF THE ARMY

NEW ORLEANS DISTRICT, CORPS OF ENGINEERS
P.O. BOX 60267

NEW ORLEANS, LOUISIANA 70160-0267

ASSISTANCE TO CONTRACTORS
FOR
SAFETY AND HEALTH STATEMENT CONTRACT SUBMITTALS

1. PURPOSE. This assistance document provides guidance to help Contractors prepare effective, relevant, and appropriate Safety and Health Statement submittals in a timely and cost effective manner.

2. APPLICABILITY. This assistance document is applicable to all Contracts requiring Safety and Health Statement submittals in the New Orleans District.

3. REFERENCES.

(1) EM 385-1-1, Dated September 2008
(2) Applicable Painting Section

4. DEFINITIONS.

a).“Competent” person(s), as defined in EM 385-1-1, is a person who can identify existing and predictable hazards in the working environment or working conditions that are dangerous to personnel and who has *authorization* to take prompt corrective measures to eliminate them.

b) “Qualified” person(s), as defined in EM 385-1-1, are those who, by possession of a recognized degree, certificate, or professional standing, or extensive knowledge, training, and experience, has successfully demonstrated the ability to solve or resolve problems related to the subject matter, the work, or the project.

5. ELEMENTS OF AN APPROPRIATE SAFETY AND HEALTH STATEMENT SUBMITTAL

(1) Qualifications and Experience Statement

A brief statement in the form of a “cover-page”. This statement is signed and dated by the a) Contractor, b) Qualified person(s), and c) Competent

person(s) that the Contractor has selected to develop the required safety and health statement submittals and who will act as the Contractor's on-site safety and health representative(s) during the Contract period. Applicable and/or required documentation supporting the Q&E statement such as resumes, training certificates, diplomas, etc. should be included in Appendix A.

(2a) Accident Prevention Plan Statement

A brief statement in the form of a simple checklist (LMN Form 385-7-R) used to quickly identify major Contractor compliance requirements with the a) safety and health provisions, or b) supplements to the safety and health provisions, contained in the Contract Clause in Section 00700 entitled, , "*Accident Prevention (FAR 52.236-13)"*. Applicable and/or required documentation supporting the Accident Prevention Plan Statement, such as required safety and health plans, procedures, SOP's, etc., should be included in Appendix B.

(2b) Activity Hazard Analysis Statement

This is a brief statement in the form of a simple box-list (LMN 385-6-R) used to quickly identify the a) major sequence of work, b) major potential hazards associated with each sequence of work, c) recommended controls for significant potential hazards associated with each sequence of work, d) major equipment to be used for each sequence of work, e) QC/Safety inspection requirements associated with each major sequence of work, and f) training requirements associated with each major sequence of work. Applicable and/or required documentation supporting the Activity Hazard Analysis Statement such as equipment specifications, QC inspection forms, and personnel training certificates, etc., should be included in Appendix C.

(3) Confined Space Statement

If confined spaces are to be entered as part of a major phase of work, this statement will be used to quickly identify the scope and extent of the work to be performed within confined spaces. This statement is also used to quickly determine the whether confined spaces will or will NOT be entered. Applicable and/or required documentation supporting the Confined Space Statement such as equipment specifications, SOP's for confined space monitoring, training, entry, work, and emergency actions, etc., should be included in Appendix D.

(4a) Respiratory Protection Statement

This is a brief statement used to quickly identify the type of respirator to be worn as a recommended control for significant potential respiratory hazards associated with each sequence of work as defined in the Activity Hazard Analysis Statement. Applicable and/or required documentation supporting the Respiratory Protection Statement such as policies and procedures for the selection, fit testing, use, training, maintenance, cleaning, storage, record-keeping, and medical requirements should be included in Appendix E.

(4b) Material Safety Data Sheet Statement

This is a brief statement used to quickly identify hazardous materials that will be brought onto the job-site by the Contractor. Copies of MSDS's for hazardous materials used on the job-site shall be provided to the Government's on-site representative prior to use. Copies of applicable MSDS's should be included in Appendix F.

(5) Airborne Sampling Plan Statement

This is a brief statement used to quickly determine the necessity and/or applicability for the development and submittal of an Airborne Sampling Plan based upon potential environmental quality concerns and/or major potential respiratory hazards associated with each sequence of work as defined in the Activity Hazard Analysis Statement. Applicable and/or required documentation supporting the Airborne Sampling Statement such as reviews of constituents of paint systems, thinners, cleaners, and abrasive media as well as confined spaces to be entered which will determine the necessity and scope of an Airborne Sampling Plan should be included in Appendix G.

(6) Ventilation Assessment Statement

This is a brief statement used to quickly determine how adequate amounts of fresh air will be provided to employees performing activities in enclosed or confined spaces. Applicable and/or required documentation supporting the Ventilation Assessment Statement such as the use of smoke tubes to test the effectiveness of ventilation efforts, oxygen and CGI's to test for flammable and toxic vapors, and requirements for intrinsically safe or explosion proof electrical equipment, etc., should be included in Appendix H.

(7a) Medical Surveillance Statement

This is a brief statement describing how medical surveillance, if applicable, will be provided to on-site employees. Applicable and/or required documentation supporting the Medical Surveillance Statement such as physician clearance statements, physical limitations, employee physical and psychological capability to wear respirators of PPE, etc., should be included in Appendix I.

(7b) Worker Hazard Communication Statement

This is a brief statement describing how hazardous materials to be used or generated during major sequences of work will be identified, and how employees will be informed of the hazards prior to the beginning of work tasks. Applicable and/or required documentation supporting the Worker Hazard Communication Statement such as the Contractor's Hazard Communication Program should be included in Appendix J.

(8) Waste Classification, Handling, and Disposal Plan Statement

This is a brief statement describing how the disposal of all hazardous and non-hazardous waste materials generated during the project will be done. Applicable and/or required documentation such as the Waste Classification, Handling, and Disposal Plan should be included in Appendix K.

(9) Ambient Air Monitoring Plan Statement for Particulate Emissions

This is a brief statement describing how particulate emission generated during the project will be monitored. Applicable and/or required documentation such as the Ambient Air Monitoring Plan should be included in Appendix L.

(10) Visible Emissions Statement

This is a brief statement describing how visible particulate emission generated during the project will be monitored. Applicable and/or required documentation such as provisions for halting work, containment corrections, and/or the Visible Emissions Air Monitoring Plan should be included in Appendix M.

6. <u>ITEMS ASSOCIATED WITH AN APPROPRIATE SAFETY AND HEALTH STATEMENT SUBMITTAL</u>

ITEM1 Eng Form, 4025-RMAR 95 (ER 415-1-10)
ITEM2 Accident Prevention Plan Checklist

ITEM5	Safety and Health Statement Ordered List
ITEM7	Activity Hazard Analysis (LMN 385-6-R)
ITEM9	Supporting Documentation In Ordered Appendices

7. PROCEDURE

STEP 1

Refer to Section 09940, “PAINTING” and Contract Specification, paragraphs 1.5 and 1.5.1 “Statements”. Note that this Section contains a listing of ten (10) Safety and Health related statement/ submittals required by Contract.

(1) Qualifications and Experience Statement
(2) Accident Prevention Plan/Activity Hazard Analysis Statement
(3) Confined Space Procedures
(4) Respiratory Protection Program/Material Safety Data Sheets
(5) Airborne Sampling Plan
(6) Ventilation Assessment
(7) Medical Surveillance Program / Worker Hazard Communication Program
(8) Waste Classification, Handling, and Disposal Plan
(9) Ambient Air Monitoring Plan for Particulate Emissions
(10) Visible Emissions

STEP 2

Prepare ENG FORM, 4025-RMAR 95 (ER 415-1-10) by listing the ten (10) Safety and Health statement submittals required by Contract. A copy of ENG FORM, 4025-RMAR 95 (ER 415-1-10) has been provided to you. An example of a completed ENG FORM, 4025-RMAR 95 (ER 415-1-10) has been included for your convenience.

STEP 3

a). Refer to Section 00940, Paragraph 1.6 “QUALIFICATIONS”.

b). Select (1) "Qualified” and (2) “Competent” person(s)" who will develop and implement the required safety and health statement submittals for your project, and who will act as your on-site safety and health representative during the Contract period.

c). The “Qualified” person(s) you choose to be responsible for the accuracy and completeness of the prepared safety and health statement submittals (i.e., air sampling, confined space program, medical surveillance, hazard communication, ventilation system, etc.) shall be a current practicing Certified Industrial Hygienist (CIH) or Certified Safety Professional (CSP) with a minimum of three (3) years of demonstrated experience in similar related work.

d). The “Competent” person(s) you choose to prepare the safety and health statement submittals, as defined in EM 385-1-1, is a person who can identify existing and predictable hazards in the working environment or working conditions that are dangerous to personnel and who has *authorization* to take prompt corrective measures to eliminate them.

e). NOTE: In general, the “Competent” person(s) are those *contractor* personnel involved in the development of the required Safety and Health Statement submittals and who will act as the on-site safety and health representative during the Contract Order period. The “Qualified” person(s) are those in-house OR contracted health and safety *professionals* whose responsibility is to ensure the accuracy and completeness of the required Safety and Health Statement submittals prepared by the “Competent” person(s) AND who may, at the option of the Contractor and the health and safety professional, act as the on-site safety and health representative during the Contract period.

STEP 4

Prepare and submit for USACE review and acceptance, a written Qualification and Experience statement signed and dated by (1) the Contractor, (2) the "Qualified” person(s), and (3) the “Competent” person(s) that have been selected to develop and implement the required safety and health statement submittals and who will act as the on-site safety and health representative during the Contact period. NOTE: Acceptance of this submission must be obtained prior to the submission of other required Safety and Health Statement submittals.

STEP 5

Prepare the Safety and Health statement submittals utilizing any “Competent” person(s) of choice. Note that this does not preclude the Contractor from having a “Qualified” person(s) prepare the Safety and Health statement submittals if an in-house “Competent” person(s) cannot be identified.

STEP 6

After USACE review and acceptance of the written Qualification and Experience statement;

a). Provide the “Qualified” person(s) with the safety and health statement submittals prepared by the “Competent” person(s) in STEP 5 above, and

b). Ensure that the “Qualified” person(s) have received all relevant and applicable information about the job to be done, including, but not limited to, INDEX SECTION 09940, “PAINTING”, so that a proper evaluation of the safety and health statement submittals prepared by the “Competent” person(s) can be accomplished by the “Qualified” person(s), and

c). Ensure that the “Qualified” person(s) sign and stamp the safety and health statement submittals prepared by the “Competent” person(s) to verify approval.

STEP 7

Submit to USACE the following information:

a). The ENG FORM, 4025-RMAR 95 (ER 415-1-10) listing the ten (10) Safety and Health statement submittals required by this Contract prepared in STEP 2.

b). The safety and health statements prepared by the Competent person(s) and signed and stamped by the Qualified person(s).

c). Any supporting documentation deemed necessary by the Qualified person(s) to verify or validate the safety and health statement submittals.

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SEPARATOR GEOTEXTILE

PART 1 GENERAL

1.1 SCOPE

The work provided for herein consists of furnishing all plant, labor, material, equipment; performing all operations required for furnishing, hauling, placing the separator geotextile; and maintaining the geotextiles until placement of the stone is completed and accepted.

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.

ASTM INTERNATIONAL (ASTM)

ASTM D 883	(2000) Terminology Relating to Plastics
ASTM D 4491	(1999; R 2004e1) Water Permeability of Geotextiles by Permittivity
ASTM D 4632	(1991; R 2003) Standard Test Method for Grab Breaking Load and Elongation of Geotextiles
ASTM D 4751	(2004) Determining Apparent Opening Size of a Geotextile
ASTM D 4884	(1996; R 2003) Strength of Sewn or Thermally Bonded Seams of Geotextiles

1.3 MEASUREMENT AND PAYMENT

Geotextile will be measured in place to the nearest square yard. Overlaps will be measured as a single layer. Payment for the geotextile will be made at the contract unit price per square yard for "Separator Geotextile". Price and payment shall include full compensation for providing all plant, equipment, labor and materials, and for cutting, sewing, placing, testing, taking corrective measures to fix deficiencies, and incidentals as shown on the plans and as specified herein. No payment shall be made for geotextile that is rejected or damaged due to Contractor fault or negligence.

1.4 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. The following shall be submitted in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Work Plan

The Contractor shall submit a work plan to the Contracting Officer. The plan shall include the following information:

a. The dimensions of the geotextile panels, whether the geotextile will be seamed, lapped, or both. Distance between laps, if applicable.

b. A detailed description of how the geotextile will be placed and stretched.

SD-04 Samples

Geotextile

A 5-foot by 5-foot sample of each geotextile that the Contractor plans to use shall accompany the certificate. If seams are to be used, then an additional 5-foot by 5-foot sample of each geotextile containing a sample seam in the center of the geotextile sample shall be submitted with the certificate. Geotextiles shall not be delivered to the project site until the geotextile samples and the Contracting Officer approves their certificates.

SD-07 Certificates

Geotextile; G

Contractor shall submit the geotextile manufacturer's certification of compliance. All brands of geotextile and all seams that are used in construction shall be accepted on the following basis. At least 30 days prior to installation, the Contractor shall furnish to the Contracting Officer, in duplicate, a mill certificate or affidavit signed by a legally authorized official from the company manufacturing the geotextile. The certificate shall contain the signer's title, name and address of the Contractor, contract number, and project name and location. The mill certificate or affidavit shall attest that the geotextile meets the chemical, physical, and manufacturing requirements stated in this specification and that the seams used meet the seam requirements.

1.5 QUALITY CONTROL

1.5.1 General

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

(1) Installation Equipment. Type, size and suitability for construction of the prescribed work.

(2) Geotextile Submittals. Geotextile samples, manufacturer's

certification of compliance, and work plan.

(3) Construction. Lay-out, geotextile inspection, and stone placement above the geotextile.

1.5.2 Reporting

The original and two copies of these records, as well as the records of corrective action taken, shall be furnished the Government daily. Format of report shall be as prescribed in the Section 01 45 04.00 12 CONTRACTOR QUALITY CONTROL.

1.6 SHIPMENT AND STORAGE

Geotextile shall be shipped and maintained in a heavy-duty protective cover until it is placed. During all periods of shipment and storage, the geotextile shall be protected from direct sunlight, ultra-violet rays, temperatures greater than 140 degrees Fahrenheit, mud, dirt, and other contaminants. Geotextiles delivered to the project site shall be clearly marked to show the brand name, type of geotextile, tensile strength, location and date of manufacture, and its length (machine direction) and width.

PART 2 PRODUCTS

2.1 GEOTEXTILE

The geotextile shall be a woven pervious sheet made with plastic yarn as defined by ASTM D 883. The geotextiles shall meet the requirements listed in Table 1. Geotextile fibers shall consist of a long-chain synthetic polymer composed of at least 85 percent by weight of propylene, ethylene, ester, amide, or vinylidene-chloride, and shall contain stabilizers and/or inhibitors added to the base plastic, if necessary, to make the filaments resistant to deterioration due to ultra-violet exposure. The edges of the geotextile shall be selvedged.

TABLE 1
REQUIREMENTS FOR SEPARATOR GEOTEXTILE

PROPERTY	TEST PROCEDURE	ACCEPTABLE VALUES
Grab Breaking Load	ASTM D 4632	200 pounds minimum in any principal direction
Seam Strength (**)	ASTM D 4884	100 pounds per inch minimum
Elongation at Break	ASTM D 4632	15 percent minimum in any principle direction
Apparent Opening Size (AOS)	ASTM D 4751	No finer than the U.S. Standard Sieve No. 70 and no coarser than the U.S. Standard Sieve No. 30
Permittivity	ASTM D 4491	0.35 per second minimum

TABLE 1
REQUIREMENTS FOR SEPARATOR GEOTEXTILE

(**) All of the samples shall yield test values that are greater than the minimum value that is specified.

PART 3 EXECUTION

3.1 GEOTEXTILE INSTALLATION

The geotextile shall be placed in the manner and at the locations shown on the drawings. The Contractor shall prepare the surface to receive the geotextile to insure that the surface is relatively smooth and free of obstructions, depressions, debris, soft or low density pockets of material, or stone which could damage the geotextile during placement. At the time of installation, the geotextile shall be rejected if it has defects, rips, holes, flaws, deterioration or damage incurred during manufacture, transportation or storage. The geotextile shall be protected at all times during construction to insure that the geotextile's original chemical and physical properties are not changed. The work shall be scheduled so that all of the geotextile that is placed is covered with a layer of the specified material by the end of each workday. Failure to comply shall require replacement of geotextile. All wrinkles and sags shall be stretched out immediately before stone is placed on the geotextile. The geotextile shall be protected from damage during placement of stone. This shall be accomplished by limiting the height of drop to less than 1 foot, or the water surface, whichever is greater. In the event that this damages the geotextile, the stone shall be placed directly on the geotextile with zero height of drop. Before placement of stone, the Contractor shall demonstrate that the placement technique will not damage the geotextile. The Contractor at no additional cost to the Government shall replace any geotextile that is rejected or damaged.

3.2 SEAMS AND LAPS

Seams or laps may be utilized to produce panels of geotextile large enough to cover the area shown on the drawings. Seams or laps shall be perpendicular to the centerline. Seams or laps shall not run parallel with the direction of the centerline.

3.2.1 Seams

All seams shall be sewn using thread meeting the requirements for plastic yarn specified in paragraph "GEOTEXTILE REQUIREMENTS." The sheets of geotextile shall be sewn at the factory or other approved location. Seam strengths shall meet the requirements of Table 1.

3.2.2 Laps

Geotextile panels placed along the centerline shall be overlapped a minimum of 3-feet.

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SECTION 31 05 19.05 12

REINFORCEMENT GEOTEXTILE

PART 1 GENERAL

1.1 SCOPE

The work covered by this section consists of providing all plant, labor, materials, and equipment that is required to test, haul, store, seam, overlap, and place geotextile as specified and shown on the contract drawings. It also covers implementing the specified corrective measures to repair damaged geotextile, or seams.

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.

ASTM INTERNATIONAL (ASTM)

ASTM D 4595	(2005) Standard Test Method for Tensile Properties of Geotextiles by the Wide-Width Strip Method
ASTM D 4884	(1996; R 2003) Strength of Sewn or Thermally Bonded Seams of Geotextiles
ASTM D 883	(2000) Terminology Relating to Plastics

1.3 QUALITY CONTROL

1.3.1 General

The contractor shall establish and maintain quality control for the geotextile and placement to assure compliance with contract requirements, and maintain records of 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) Geotextile Submittals. Geotextile samples, manufacturer's certification of compliance, and work plan.

(3) Construction. Layout, geotextile inspection, and fill placement above the geotextile.

1.3.2 Reporting

The original and two copies of these records, as well as the records of corrective action taken, shall be furnished the government daily. Format of report shall be as prescribed in the Section 01 45 04.00 10 CONTRACTOR QUALITY CONTROL.

1.3.3 Testing Laboratory

The Contractor shall retain the services of a laboratory that is accredited by the Geosynthetic Accreditation Institute (GAI). The laboratory shall perform only tests for which it is accredited and shall furnish field test results to the Contracting Officer within 4 days of sampling.

1.4 ACCEPTANCE REQUIREMENTS

All brands of geotextile and all seams that are to be used in construction shall be accepted on the following basis. At least 30 days prior to installation, the Contractor shall furnish to the Contracting Officer, in duplicate, a mill certificate or affidavit signed by a legally authorized official from the company manufacturing the geotextile. The certificate shall contain the signer's title, name and address of the Contractor, contract number, and project name and location. The mill certificate or affidavit shall attest that the geotextile meets the chemical, physical, and manufacturing requirements stated in this specification and that the seams used meet the seam requirements. In addition, a 5 foot by 5 foot sample of each geotextile that the Contractor plans to use and a 5 foot by 5 foot sample containing a sample seam in the center of the geotextile sample shall be submitted with one set of plotted wide width test results for each sample. The plot shall contain the stress/strain curve with clearly marked strengths at 5 percent and ultimate, in pounds per inch. Geotextiles shall not be delivered to the project site until the Contracting Officer approves the submittals.

1.5 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 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Work Plan; G

The Contractor shall submit a work plan to the Contracting Officer. The plan shall include the following:

a. The dimensions of the geotextile panels, whether the geotextile will be seamed, overlapped, or both. Distance between laps, if applicable.

b. A detailed description of how the geotextile will be placed, and stretched to eliminate wrinkles and folds.

SD-04 Samples

Geotextile and Seam Samples; G, ED-FS

The Contractor shall submit geotextile and seam samples, as specified in paragraph ACCEPTANCE REQUIREMENTS.

SD-06 Test Reports

Geotextile Test Results

The Contractor shall submit geotextile and seam test results, as specified in paragraph ACCEPTANCE REQUIREMENTS.

SD-07 Certificates

Geotextile Certificate of Compliance

The Contractor shall submit geotextile certificate of compliance, as specified in paragraph ACCEPTANCE REQUIREMENTS.

1.6 SHIPMENT AND STORAGE

Geotextile shall be shipped and maintained in a heavy protective cover until it is placed. During all periods of shipment and storage, the geotextile shall be protected from direct sunlight, ultra-violet rays, temperatures greater than 140 degrees Fahrenheit, contaminant chemicals, abrasion, mud, dirt, or any other harmful elements. Only approved geotextile shall be delivered and used in levee construction. Geotextile delivered to the project site shall be clearly marked to show the brand name, type of geotextile, tensile strength at 5 percent strain, location and date of manufacture, and its length (machine direction) and width.

1.7 MEASUREMENT AND PAYMENT

Geotextile will be measured in place to the nearest square yard of protected area as shown on the drawings. Overlaps will be measured as a single layer. No separate measurement or payment will be made for corrective action that is required to correct deficiencies that are due to Contractor fault, negligence, defective materials or workmanship. Payment for geotextile will be made at the applicable contract unit price per square yard for "Reinforcement Geotextile" and "Settlement Geotexile". Price and payment shall constitute full compensation for providing all plant, labor and materials, and for cutting, sewing, placing, testing, and corrective actions to fix deficiencies, to complete the work as specified herein and as shown on the drawings.

PART 2 PRODUCTS

2.1 GEOTEXTILE REQUIREMENTS

The geotextile shall be a woven pervious sheet made of plastic yarn as defined by ASTM D 883. The geotextile shall conform to the physical requirements specified in Table 1 and Table 2. Geotextile fibers shall consist of long chain synthetic polymer composed of at least 85 percent by weight of propylene, ethylene, ester, amide or vinylidene chloride, and shall contain stabilizers and/or inhibitors added to the base plastic, if necessary, to make the filaments resistant to deterioration due to ultra-violet exposure. The edges of the geotextile shall be selvedged. Composites shall not be used in this project.

PART 3 EXECUTION

3.1 INSTALLATION

3.1.1 Procedure

The geotextile shall be installed to the lines and grades as shown on the contract drawings. Objects, or debris that are capable of damaging the

geotextile shall be removed before the geotextile is placed. At the time of installation, the geotextile shall be rejected if it has defects, rips, holes, deterioration, or damage which was incurred during manufacture, transportation, or storage. The geotextile shall be installed with the seams facing up to allow for visual inspection. All seams and overlaps shall be placed perpendicular to the centerline of the levee. Fill shall not be placed on the geotextile until the seams or overlaps are within 5 degrees of being perpendicular to the levee centerline and all sags and wrinkles are removed from the geotextile. The Contractor shall take precautions to avoid damaging the geotextile during placement.

3.1.2 Exposure to Field Conditions

Geotextile shall not be exposed to field conditions for a duration that exceeds 5 calendar days. Exposure to field conditions is the time interval between the removal of the protective shipment cover and placement of fill on top of the geotextile. Additional time, up to a maximum of 2 weeks, can be added on a day-by-day basis for each full day the geotextile is covered by an industry accepted ultraviolet protective cover.

3.1.2.1 Testing

Any geotextile that is exposed to field conditions for more than 2 calendar weeks shall be tested for strength. The Contracting Officer will determine the number of samples to be tested.

3.1.2.2 Ultraviolet Protection

Immediately after removal of the samples to be tested, the exposed geotextile shall be covered with black visqueen or equivalent ultraviolet protection. The ultraviolet protection shall be maintained until such time as the test results are obtained and the Contractor's plan for corrective action is approved by the Contracting Officer. Corrective action shall consist of:

(a) Removal of the exposed geotextile and installation of new geotextile.

(b) No corrective action when the test results indicate conformance with the strength requirements.

All corrective actions are subject to prior approval of the Contracting Officer. Geotextile that is rejected, or damaged due to Contractor negligence shall be tested and repaired or replaced as directed by the Contracting Officer at no additional expense to the Government.

3.2 MECHANICAL EQUIPMENT

Mechanical equipment, except for light rubber-tire equipment, will not be permitted directly on the geotextile surface. Equipment used to spread the first layer of fill on top of the geotextile shall have a unit tread pressure that does not exceed 6.03 pounds per square inch. The first soil layer on top of the geotextile shall have a minimum thickness of 15 inches, +/- 3 inches between the geotextile and the track of the equipment and shall be placed and spread in a direction perpendicular to the levee centerline, unless a different method is approved by the Contracting Officer for specific locations. After a sufficient work area is established, the thickness of the layer shall be reduced to 1 foot and compacted to the specified density. Successive layers shall be of the

specified thickness for levee fill.

3.3 SEAMS and OVERLAPS

3.3.1 Seams

Geotextile panels shall be sewn along the selvedged edges so that seams run parallel with the machine direction to produce geotextile pieces that are wider than the weaving machine produces. Geotextiles shall be supplied in continuous machine direction lengths without seams. All seams shall be made with thread that meets the requirements for plastic yarn, as specified in paragraph GEOTEXTILE REQUIREMENTS. The Contractor is responsible for choosing the sewing machine, thread, stitch type, number of stitches per inch and any other particulars that are required to achieve the seam strength that is specified in Table 1.

3.3.1.1 Damaged Seams

Rips in seams that occur as a result of placement, and which are less than two feet from the end of the geotextile panel do not require repair. Rips that are longer than two feet, or of any length that occur at locations that are more than two feet from the end of the panel, shall be repaired by placing a single layer of geotextile of the same strength to cover the entire affected seam. The piece of geotextile shall extend a minimum of 5 feet on each side of the damaged seam.

3.3.2 Overlaps

Overlaps may be used at PI's, or to join pieces of geotextile that become too heavy to handle with construction machinery. All overlaps shall run in the same direction as the seams. A minimum of two feet is required at each overlap.

3.4 SAMPLING AND TESTING

The Contractor shall take the required samples to be tested. Samples shall not be any larger than are required to perform the specified tests and shall be catalogued to correspond with the levee station from which the sample was taken. The Contracting Officer reserves the right to change the location of any test, or to increase the frequency of tests, as specified in paragraph FIELD SPECIMEN LOCATIONS.

3.5 FIELD SPECIMEN LOCATIONS

3.5.1 Geotextile Panels and Seams

The Contractor shall take and perform wide-width tests according to the following schedule.

3.5.1.1 Panels

Wide-width tests shall be performed to verify the tensile strength of geotextile that was delivered to the site. One sample shall be taken from the first panel and additionally at 3,000 feet increments, measured along the levee centerline. Samples shall be obtained from the end of the panel.

3.5.1.2 Seams

Seams shall be tested using ASTM D 4884 test to verify the tensile strength

of the seams. Tests shall be performed at intervals of 2000 feet, measured along the levee C/L, or at a location specified by the Contracting Officer that will equal the same number of tests. Seam and geotextile panel samples shall not be taken from adjacent panels. All samples shall be taken from the end of the panel, unless directed to do otherwise by the Contracting Officer.

3.5.2 Test Results

The Contractor's testing laboratory shall perform ASTM D 4595, wide-width tests on all samples, ASTM D 4884 on all seams, and shall submit certified test reports indicating the following results:

(1) Wide-width tensile strength at 5 percent strain and ultimate in the machine direction (perpendicular to the levee) a stress/strain plot of each test shall be submitted with clearly marked values at 5 percent and ultimate, in (lbs/in) units.

(2) Ultimate tensile strength of seams.

(3) The job name and station from where the sample was taken shall be printed on each test sheet. Test results shall be furnished to the Contracting Officer no later than 4 days after sampling.

3.6 FIELD QUALITY CONTROL

The Quality Control Representative shall examine the geotextile for damage and defects prior to installation. Any geotextile found to be damaged or defective shall be removed from the site and replaced by an approved geotextile. In the event that samples fail to meet the specified results, the Contracting Officer has the right to direct the Contractor to perform additional tests on samples taken between the location of the failed test and the location of the previous successful test. Geotextile that fails to meet test requirements shall be replaced with geotextile that meets the required strength. Seams that fail the test requirements shall be disassembled and stitched with a seam that meets test requirements, or shall be repaired by placing a panel of 300 lbs/in ultimate strength geotextile on top of the defective seam. The geotextile piece shall extend 5 feet on each side and cover the entire affected seam. The Contracting Officer shall choose the method of repair. If the Contractor places fill on top of a seam, or geotextile which fails to meet the specified test results, then the fill shall be removed and the defective geotextile or seam shall be repaired. The Contractor will not be paid for any work or supplies in this paragraph.

TABLE 1

PHYSICAL REQUIREMENTS FOR SETTLEMENT GEOTEXTILE

Geotextile Type: Woven permeable geotextile

Property	Test Method	Minimum Certifiable Value
@ 5% strain	ASTM D 4595	400 lbs/in
@ ultimate		800 lbs/in for polyester 1000 lbs/in for polypropylene

		1333 lbs/in for polyethylene
Seam Strength (*) Factory or Field	ASTM D 4884	300 lbs/in

(*) All of the samples shall yield test values that are greater than the minimum value that is specified.

TABLE 2

PHYSICAL REQUIREMENTS FOR REINFORCEMENT GEOTEXTILE

Geotextile Type: Woven permeable geotextile

Property	Test Method	Minimum Certifiable Value
@ 5% strain	ASTM D 4595	1000 lbs/in
@ ultimate		2000 lbs/in for polyester 2500 lbs/in for polypropylene 3333 lbs/in for polyethylene
Seam Strength (*) Factory or Field	ASTM D 4884	300 lbs/in

(*) All of the samples shall yield test values that are greater than the minimum value that is specified.

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SECTION 31 11 00.00 12

CLEARING AND GRUBBING

PART 1 GENERAL

1.1 SCOPE

The work covered by this section consists of furnishing all plant, labor, equipment, and materials, and performing all operations necessary for the clearing and grubbing of the areas specified herein or indicated on the drawings, for the removal and disposal of all cleared and grubbed materials, and for the filling of all holes caused by grubbing operations, as specified herein.

1.2 MEASUREMENT AND PAYMENT

No measurement will be made for clearing and grubbing. Payment for clearing and grubbing will be made at the contract lump sum price for "Clearing and Grubbing." Price and payment shall constitute full compensation for furnishing all plant, labor, material and equipment and performing all operations necessary for windrowing, clearing and grubbing of the areas specified herein or indicated on the drawings, for removing and disposing of all cleared and grubbed materials, and for filling holes resulting from grubbing operations, and placing embankment to replace earthen material removed as a result of vegetation removal operations.

1.3 QUALITY CONTROL

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

(1) Clearing. Station to station limits transverse clearing limits from applicable centerline; percentages of area complete; type of material.

(2) Grubbing. Station to station limits, transverse grubbing limits from applicable centerline; percentage of area complete; type of material.

(3) Disposition of Cleared and Grubbed Materials. Method and location of disposition; damage to timber or improvements which are not to be cleared.

The original and two 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 01 45 04.00 10 CONTRACTOR QUALITY CONTROL.

1.4 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. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

40 CFR 76	Acid Rain Nitrogen Oxides Emission Reduction Program

STATE OF LOUISIANA, AIR CONTROL COMMISSION (LACC)

Act 1964, No. 259	(Title 40, Section 2201) Acid Rain Nitrogen Oxides Emission Reduction Program

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

3.1 GENERAL REQUIREMENTS

All clearing and grubbing work for embankments shall be completed at least 500-feet in advance of embankment construction. If regrowth of vegetation or trees occurs after clearing and grubbing and before placement of fill, the Contractor will be required to clear and grub the area again prior to embankment construction, and no payment will be made for this additional clearing and grubbing.

3.2 CLEARING

3.2.1 General

Clearing, unless otherwise specified, shall consist of the complete removal above the ground surface of all trees, stumps, down timber snags, brush, vegetation, loose stone, abandoned structures, fencing, and similar debris. Growth standing in water in areas that are not drained in accordance with Section 31 24 00.00 12 EMBANKMENT, paragraph Drainage may be cut off so as not to protrude more than 12 inches above the existing water surfaces.

3.2.2 Merchantable Timber

Merchantable timber remaining within the areas to be cleared on or after the date of award of this contract may be disposed of as the Contractor sees fit, as long as such merchantable timber is either removed from the right-of-ways indicated on the drawings or is satisfactorily disposed of in accordance with the provisions of paragraph "DISPOSAL OF DEBRIS."

3.2.3 Government Surveys

The Contractor shall clear the baseline traverse, centerline traverse, and ranges at all P.C.'s, P.I.'s, P.T.'s, 100-foot centerline stations and tie-in stations to facilitate the taking of original cross-sections by the Government. This clearing shall consist of the removal to within 6-inches of the ground surface of all trees, brush and vegetation. This clearing shall be completed in 5,000-foot increments and in advance of embankment construction by a minimum of 1,000 feet.

3.2.4 Trees

Trees shall be felled in such a manner as to avoid damage to trees to be left standing, to existing structures and installations and to those under construction, and with due regard for the safety of employees and others.

3.2.5 Vegetation

Vegetation to be removed shall consist of crops, grass, bushes, and weeds. Close-growing grass and other vegetation shall be removed from areas to receive embankment or road fill to provide a complete bare earth surface immediately prior to foundation preparation. Removal of vegetation from the side of existing levees shall be limited to 1,000-feet in advance of embankment placement. Acceptance of the vegetation removal operation shall precede the initiation of foundation preparation in the area from which vegetation has been removed.

3.2.6 Miscellaneous Debris

During the Contractor's clearing and grubbing for the new levee offset location, the Contractor may encounter debris such as, large buried trees or roots, branches, stumps, pieces of concrete slab, large rock, exposed roots and other types of debris that are not earthen materials The Contractor shall remove all debris in accordance with paragraph "Removal From Site of Work."

3.2.7 Areas to be Cleared

3.2.7.1 General

The entire area to be occupied by the embankment, together with strips 15-feet wide contiguous thereto.

3.2.7.2 Other Areas

Clearing of the area between the 15-foot strip contiguous to the embankment shall be limited to the minimum required for construction operations.

3.2.7.3 Removal and Replacement of Existing Chain-Link Fencing

As indicated on the drawings, portions of existing chain-link fencing shall be removed for levee construction. The fence/gate shall be replaced upon completion of work in each area. The Contractor may salvage the fence fabric and gates, but will be required to provide new posts set in concrete for replacement of the fence fabric. All salvaged material shall be stored at the Contractor's mobilization site during levee work period.

3.2.7.4 Removal of Abandoned Concrete Culvert

As indicated on the drawings, in the vicinity of B/L Sta. 103+50 approximately 70-feet (+/-) from the flood side toe of the existing levee is an abandoned 48-inch concrete culvert and shall be removed from the job site by the contractor in accordance with paragraph "Removal From Site Work".

3.3 GRUBBING

3.3.1 General

Grubbing shall consist of the removal of all stumps, roots, buried logs, pipes, drains, and other unsuitable matter as described in Section 31 24 00.00 12 EMBANKMENT, paragraph Materials.

3.3.2 Areas to be Grubbed

3.3.2.1 Embankments

Grubbing shall be performed within the limits of the embankment together with the 15-foot strips contiguous thereto. All roots and other projections over 1-1/2-inches in diameter shall be removed to a depth of 3-feet below the natural surface of the ground. The areas to be grubbed are those specific areas within the limits specified herein above from which trees, stumps, down timber, snags, abandoned structures, and other projections have been removed.

3.3.3 Filling of Holes

All holes caused by grubbing operations and removal of debris, excluding holes in borrow areas shall be backfilled with suitable material in 12-inch layers to the elevation of the adjacent ground surface, and each layer compacted to a density at least equal to that of the adjoining undisturbed material.

3.4 DISPOSAL OF DEBRIS

3.4.1 General

Debris resulting from clearing and grubbing operations at the construction site shall, at the Contractor's option, be disposed of either by windrowing of grass vegetation for erosion control, burning, or removal from the site. The Contractor shall make a reasonable effort to channel merchantable material into the commercial market to make beneficial use of materials resulting from clearing and grubbing operations. The material resulting from the vegetation removal operations on the side of the existing levee shall be stockpiled within the right-of-way limits and be evenly spread over the completed embankments prior to the fertilizing and seeding operation.

3.4.2 Windrow for Erosion Control

Grass vegetation removed during clearing operation shall be stockpiled in a neat windrow at locations as shown on the drawings. In order to prevent ponding from occurring, the Contractor shall be instructed by the Contracting Officer's Representative to remove portions of the windrow and replace it as necessary to premit drainage between the two alignments. Sediment retention shall consist of a tieback into the existing embankment at each end of each reach of work in order to provide a continuous closed system of erosion control. The windrows material and any remaining material trapped along the levee alignment shall be removed and evenly spread over the new levee slope, prior to the turfing operation. The Contractor shall inspect and maintain a closed system in accordance with the specifications. No debris or cleared or grubbed material shall be placed outside the clearing limits.

3.4.3 Burning

The Contractor shall comply with the applicable pollution restrictions of 40 CFR 76 and Louisiana Air Control Commission, effective 17 July 1972, amended November 1972 (Act 1964, No. 259). Subject to such restrictions and obtaining any permit which may be required by said commission, the Contractor may burn material within the contract area, and at any time within the contract period. Burning operations shall be conducted so as to prevent damage to standing timber or other flammable growth. The Contractor shall be responsible for any damage to life and/or property resulting from fires that are started by his/her employees or as a result of his/her operations. The Contractor shall furnish, at the site of burning operations, adequate fire fighting equipment to properly equip his/her personnel for fighting fires. Fires shall be guarded at all times and shall be under constant surveillance until they have been extinguished.

3.4.4 Removal From Site of Work

The Contractor shall remove all of the debris from the site of the work. Such disposal shall comply with all applicable Federal, State, and Local laws. The Contractor shall, at his/her option, either retain for his/her own use or dispose of by sale or otherwise, such materials of value. The Government is not responsible for the protection and safekeeping of any materials retained by the Contractor. Such materials shall be removed from the site of the work before the date of completion of the work. If debris from clearing operations is placed on adjacent property, the Contractor shall obtain, without cost to the Government, additional right-of-way for such purposes. Such material shall be so placed as not to interfere with roads, drainage or other improvements and in such a manner as to eliminate the possibility of its entering into channels, ditches, or streams. The Contractor shall submit written evidence to the Contracting Officer that he/she has obtained from the property owner permission for disposal of material on the owner's property. The written evidence shall consist of an authenticated copy of the conveyance under which the Contractor acquired the property rights and access thereto, prepared and executed in accordance with the laws of the State of Louisiana. If temporary rights are obtained by the Contractor, then the period of time shall coincide with the requirements in the Contract Clause in Section 00700 entitled, COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK (FAR 52.211-10), plus any extension authorized under the Contract Clause entitled, DEFAULT (FIXED-PRICE CONSTRUCTION) (FAR 52.249-10), subparagraph (b) (1). However, delay resulting from acquisition of additional rights-of- way for alternate disposal areas will not qualify as excusable delays if suitable Government-furnished disposal areas are available.

Approved disposal sites in the vicinity are as follows:

River Birch Landfill
2000 Hwy. 90
Avondale, LA 70094

Jefferson Parish Landfill
5800 Hwy. 90
Avondale, LA 70094

Industrial Pipe-Plaquemines Parish
11266 Highway 23
Belle Chasse, LA 70037

Amid Landfill, Orleans Parish
11005 Almonaster Ave.
New Orleans, LA

3.4.5 Riprap Stone Scour Protection

The existing riprap stone used for scour protection at the Westwego Seaplane Airport Canal shall be removed and stockpiled in order to complete the new levee section. The stone will not become the property of the Contractor, but shall be stored by the Contractor on accessible sites within the right-of-way, as designated by the Contracting Officer. At completion of the new levee section the riprap shall be place on the new section as indicated on the drawings.

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SECTION 31 23 00.00 12

EXCAVATION

PART 1 GENERAL

1.1 SCOPE

The work covered by this section consists of furnishing all plant, labor, equipment, and materials, and performing all operations necessary for stockpiling materials and for excavation of drainage ditches, and all other excavation incidental to the construction of embankments as specified herein or as shown on the drawings.

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.

ASTM INTERNATIONAL (ASTM)

ASTM D 698	(2007e1) Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/cu. ft. (600 kN-m/cu. m.))
ASTM D 1140	(2000; R 2006) Amount of Material in Soils Finer than the No. 200 (75-micrometer) Sieve
ASTM D 2216	(2005) Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass
ASTM D 2487	(2006e1) Soils for Engineering Purposes (Unified Soil Classification System)
ASTM D 2974	(2007a) Moisture, Ash, and Organic Matter of Peat and Other Organic Soils
ASTM D 4643	(2008) Determination of Water (Moisture) Content of Soil by the Microwave Oven Method
ASTM E 1527	Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process
ASTM E 2247	(2005) Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process for Forestland or Rural Property

1.3 MEASUREMENT

1.3.1 Excavation

Excavation required by this section for borrow material and degrading the existing levee will not be measured separately for payment, except materials ordered wasted by the Contracting Officer.

1.3.2 Waste Materials

Materials ordered wasted by the Contracting Officer will be measured for payment by the cubic yard, and quantities will be determined by the average end area method. The basis of measurement will be a survey of the area prior to excavation and a second survey of the same area after completion of the excavation.

1.4 PAYMENT

1.4.1 Excavation

No separate payment will be made for borrow excavation and degrading the existing levee. Payment shall be included in the contract price for "Embankment, Compacted Fill".

1.4.2 Waste Materials

The Contractor may encounter material in the degrading of existing levee that will be ordered wasted. Payment for materials ordered wasted will be made by an equitable adjustment in accordance with the Contract Clause in Section 00700 entitled Changes (FAR 52.243-4).

1.5 QUALITY CONTROL

The Contractor shall establish and maintain quality control for excavation 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) Disposition of Materials. Testing Program, Location of tested materials (station), Applicable Compaction Curves.

(2) Ditches. Locations grade and cross-section.

(3) Traverses. Locations and dimensions.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

3.1 CONTRACTOR-FURNISHED BORROW AREAS

3.1.1 General

The Contractor, at its option, may use borrow areas other than those indicated provided that the Contracting Officer approves their locations and dimensions. The Contractor shall submit a written statement to the

Government within fifteen (15) days after contract award on their intention to provide a Contractor-furnished borrow source or utilize a borrow source from the Clay Source List in Section 01100, paragraph "Clay Sources" . The statement shall include the proposed site name, a description of the location, and a vicinity map. The Contractor shall ensure that any Contractor-furnished borrow area submitted has all applicable environmental documentation acquired, current, and up-to-date, as described in paragraph "Submittal Package Requirements in Detail". All costs arising or growing out of the use of Contractor-furnished borrow areas shall be borne by the Contractor. The Contractor shall submit the information described in paragraph "Submittal Package Requirements in Detail" to the Contracting Officer for review and approval. The Contractor shall comply with the requirements of the Section 01100 GENERAL PROVISIONS, provision "RIGHTS-OF-WAY," subparagraph b.

3.1.2 Time Extensions

No time extension to the contract completion date will be granted to the Contractor for delays incurred due to obtaining Contractor furnished borrow areas. The Contractor shall be solely responsible for any and all damages, claims for damages, and liability of any nature whatsoever arising from or growing out of the use of borrow areas other than those furnished by the Government.

3.1.3 Approval

Approval of the location and dimensions of the Contractor furnished borrow area shall neither relieve the Contractor from its obligation to furnish satisfactory material to the project nor commit the Government to the acceptance of the responsibility for the character, quantity, or availability of material in Contractor furnished borrow areas.

3.1.4 Submittal Package Requirements

The Contractor in a single, complete package shall submit the following information for its proposed Contractor-furnished borrow area, whether it is from the "Clay Source List" or it is a new proposed site . All documentation presented for the proposed borrow source shall be current and up-to-date. The submittal of incomplete, out of date, or insufficient documentation may result in the Contractor being denied the use of the proposed borrow source. The Contractor shall allow a minimum of thirty (30) days, after the receipt of the package, for the Government's review, processing, and approval. The Contractor shall allow a minimum of one hundred twenty (120) days after the receipt of the package for the Government's review, processing, and approval of a new proposed borrow source that hasn't been previously investigated.

(1) Right of entry

(2) Maps as follows:

(a) Location and direction map.

(b) Topographic map(s) with scale of 1:24,000.

(c) Layout map with dimensions and property boundary defined by latitude and longitude coordinates.

(d) Soil boring location map.

(3) Jurisdictional Wetlands Determination from the USACE.

(4) Coastal zone management (CZM) and Coastal Use Permit (CUP).

(5) Threatened & Endangered Species (T&E) concurrence from the U.S. Fish and Wildlife Service.

(6) Phase I Cultural resources survey.

(7) Phase I Environmental site assessment.

(8) Geotechnical Report.

(9) Borrow Area Agronomy Report.

(10) Borrow Area Management Plan.

(11) Mitigation requirements.

(12) Zoning classification.

(13) Environmental Protection Plan.

(14) Louisiana Department of Transportation and Development (LADOTD), permits or approvals.

3.1.5 Submittal Package Requirements in Detail

3.1.5.1 Right of Entry

A Right of Entry form signed by the landowner(s) that covers the contract duration shall be included in the package. If the proposed clay source Point-of-Contact (POC) is not the landowner, then the Contractor furnished package should include a document signed by the landowner(s) stating that the POC is acting as an agent of the landowner(s) and has the right to represent the landowner(s) in all Contractor-furnished efforts. In the event the POC is unable to obtain the signature of each landowner, then the POC must submit a letter stating the name, address, and phone number of each landowner and that the POC has the authority of the landowner(s) to represent the landowner(s) in all Contractor-furnished efforts.

3.1.5.2 Maps

The following maps shall be provided:

(1) A map of the general area giving detailed instructions on how to get to the Contractor furnished borrow source from the nearest major highway.

(2) A topographic map(s) (quadrangle) with a scale of 1:24,000 with the location of the borrow area superimposed. The map should allow for zooming in and out to depict the nearest city or town.

(3) A layout map of the borrow area showing the dimensions of the borrow area, locations of soil borings, and latitude/longitude points to reference property boundaries. The map shall show the location and dimensions of any haul road that exists or is to be constructed to help the Contractor in its hauling operation. The map shall also show the

location and dimensions of any protection dikes which will help the Contractor drain and keep the borrow area dry.

3.1.5.3 Wetland Determination

Package must include U.S. Army Corps of Engineers (USACE) Jurisdictional Wetland Determination (JD) letter and map. The Contractor shall avoid jurisdictional wetlands, with an adequate buffer. The Corps is currently avoiding impacts to jurisdictional wetlands, as such Contractors are advised that sites with jurisdictional wetlands present that would be impacted by the Contractors borrow actions are to be avoided. If the Contractors plan includes impacts to jurisdictional wetlands due to an unrelated construction activity, a USACE Section 404 permit and/or Section 10 permit will be required. A JD is valid and considered current for five (5) years from the date of issuance.

3.1.5.4 Coastal Zone Management (CZM)

Package must include a Coastal Use Permit (CUP) Application, and a Letter of No Objection (LNO) or CUP from the Louisiana Department of Natural Resources for borrow areas in Louisiana, or the respective state agency for other states. A CUP Application, and CUP or LNO from the local agency must be provided when the state decides that it is a matter of Local Concern. A CUP is valid, and is considered current usually for two (2) years from the date of issuance.

3.1.5.5 Threatened & Endangered Species (T&E)

Package must include a consultant's report and a concurrence letter of "No Effect on T&E Species" from the U.S. Fish & Wildlife Service. The consultant's report must include a map of the studied area with the study area boundary defined by latitude and longitude coordinates. T&E concurrence is valid, and considered current for one (1) year from the date of issuance.

3.1.5.6 Cultural Resource Report

Package must include seven (7) bound copies of a Phase I Cultural Resource Survey prepared by a professional cultural resource management (CRM) company that has staff who meet the Secretary of the Interior's Professional Qualifications Standards (http://www.nps.gov/history/local-law/arch stnds 9.htm). The report must include a map of the studied area with the study area boundary defined by latitude and longitude coordinates.

3.1.5.7 Environmental Site Assessment

Package must include an Environmental Site Assessment (ESA) that shows a low risk of encountering Recognized Environmental Conditions (REC). The ESA must conform to ASTM E 1527 or ASTM E 2247 (if applicable) standards. The ESA must include a map of the studied area with the study area boundary defined by latitude/ longitude coordinates. An ESA is valid, and considered current for six (6) months from the date of the report.

3.1.5.8 Soil Boring Analysis

Package must include a Geotechnical Report stamped and signed by a licensed civil engineer with a specialization in geotechnical engineering certifying that the proposed source contains suitable material meeting the

specifications outlined below.

(1) The Geotechnical Report must consist of a summary and conclusion section in the main body of the report with any supporting data attached separately. The licensed engineer shall determine the sub-surface investigations required. These investigations should include but are not limited to continuous soil borings and test pits. Cone Penetrometer tests may also be included to supplement the physical samples and lab testing provided.

(2) Investigations shall be spaced according to the geotechnical engineer's sub-surface evaluation and be representative of the entire proposed source. The licensed engineer's test plan must provide a comprehensive sampling to at least five (5) feet below the bottom of the proposed excavation.

(3) All soil samples must be classified in accordance with the Unified Soil Classification system. See below for required soil testing. The supporting data attached to the geotechnical report shall be comprehensive and include as a minimum all field logs, soil sampling and testing results, and a detailed investigation location map with the location of the potential borrow source and all investigation locations superimposed. The soil investigation locations must include latitudes and longitudes for plotting purposes.

3.1.5.9 Laboratory Tests

The following laboratory tests must be performed:

(1) Soil classification shall be performed in accordance with the Unified Soil Classification System and ASTM D 2487.

(2) Atterberg Limits Test shall be performed in accordance with ASTM D 4318.

(3) Determination of moisture content shall be performed in accordance with ASTM D 2216 or ASTM D 4643.

(4) Determination of organic content shall be performed in accordance with ASTM D 2974, Method C.

(5) Control compaction curves shall be established in accordance with ASTM D 698 (Standard Proctor Compaction Tests). A control compaction curve is required for each soil type from each source. Where material is blended and stockpiled, a 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".

(6) Sand Content shall be determined by- 200 wash in accordance with ASTM D 1140.

3.1.5.10 Test Procedures for Borings

The testing procedure for borings shall be as follows:

(1) A moisture content determination shall be made and recorded on all samples classified as (CH), (CL), and (ML) at no less than 2 foot intervals.

(2) For (CH), (CL), and (ML) soils, Atterberg Limits and Organic

Content Testing (ASTM D 2974, Method C), is required every 5 feet (minimum).

(3) Samples with moisture contents at 70% or higher or having a Liquid Limit of 70 or higher must be tested for organic content for that sample as well as for a sample 2 feet above and 2 feet below that sample.

(4) Sand content tests will be required for samples that classify as CL (with a PI greater than 10) and for all clay samples (CH and CL) with greater than 10% coarse grain materials estimated by visual classification for 2 or more consecutive feet.

(5) Sand content tests shall be limited to one test every 5 feet of sampling and shall conform to ASTM D 1140 (#200 sieve required).

(6) Sand content tests will be required for samples that classify as a ML, but limited to one test every 5 feet of sampling.

If a borrow site is within 1,500 feet of the Mississippi River Levee (MRL) or within 300 feet of a Hurricane Protection Levee (HPL), a permit from the local sponsor MUST be included. For additional information regarding this permit, please contact Amy Powell, Amy.E.Powell@usace.army.mil, (504) 862-2241 OR Karen Oberlies, Karen.L.Oberlies@usace.army.mil, (504) 862-2313.

3.1.5.11 Borrow Area Agronomy Report

Written results of tests performed by a certified public or private agronomist to prescribe whatever modifications, if any, will have to be made to Section 32 92 19.04 12 TURF ESTABLISHMENT AND MAINTENANCE, to ensure a satisfactory growth of grass. All costs associated with the testing of the alternate borrow area material and modifying Section 32 92 19.04 12 TURF ESTABLISHMENT AND MAINTENANCE to ensure an adequate growth of grass shall be borne by the Contractor.

3.1.5.12 Borrow Area Management Plan

The Contractor shall provide the Contracting Officer a plan for clearing, stripping, and excavating materials from the proposed Contractor-furnished borrow area. In its plan, the Contractor shall show work areas, stockpile areas, etc, all within its leased or owned property boundaries. The Contractor shall not work or move material outside the boundaries of the approved limits of it's borrow area. The Contractor shall indicate in writing and show on its layout plans details of the following:

(1) A stockpile plan for cleared and stripped material and debris to include disposal areas.

(2) The locations for disposal of wasted material discovered in the borrow area. Location of any haul roads constructed to help the Contractor in its hauling operations.

(3) A plan for stockpiling embankment material before it is transported to the project site to include locations, stockpile heights, slopes, and limits.

(4) The method and route for transporting the excavated material from the Contractor-furnished borrow area to the project site.

(5) The proposed methods for draining and keeping dry during excavation the borrow area excavated under this contract, including any protection

dikes constructed to alleviate drainage problems.

(6) A complete list of excavation and transportation equipment planned for use in its operations.

(7) The Contractor's proposed sequence of excavating the borrow area showing starting and ending work locations.

(8) A list of permits required and the issuing office.

3.1.5.13 Mitigation Requirements

The package must include a written plan and map that describes and shows any areas subject to laws or regulations (Clean Water Act Section 404, Rivers and Harbors Act Section 10, National Historical Preservation Act, Section 906 of WRDA 1986, HTRW, etc.) that hold jurisdiction within the proposed borrow area. Borrow area is defined to include access routes, loading and unloading facilities, staging areas, etc. Plan and maps must clearly show areas/resources being avoided, areas where any impacts were minimized, and areas where it has been determined that impacts are unavoidable. Resources include but are not limited to areas of cultural interest, bottomland hardwood forest, wetlands subject Section 404 of the Clean Water Act, Threatened and Endangered species including any habitat deemed critical by the U.S. Fish and Wildlife Service, and areas found to be hazardous, toxic, or to contain radioactive waste. The U.S. Army Corps of Engineers New Orleans District (CEMVN) Environmental Team Coordinator will determine the consequences of a proposed action on any resources identified on the property in question. Plan and maps will be reviewed as outlined in paragraph "Government Performed Environmental Assessment" below, including any mitigation deemed necessary. For mitigation related to unavoidable impacts to wetlands or forested area as written proof shall constitute a letter from a mitigation bank showing compensatory mitigation has been completed as "in-kind" in the hydraulic basin.

Contractor-furnished borrow utilizing one of the clay sources listed in Section 01100, paragraph "Clay Sources" shall provide written proof of the required mitigation necessary has been accomplished. Notice to Proceed will not be granted until this proof is provided to the Contracting Officer. Written proof shall constitute a letter from a mitigation bank showing compensatory mitigation has been completed as "in-kind" in the hydraulic basin.

3.1.5.14 Zoning Classification

Written evidence that the property intended for use as a Contractor furnished borrow area contains the proper zoning classification that will allow the Contractor to excavate the property and use it as a borrow area. This evidence shall consist of a letter from the local land zoning office stating the zoning classification of the proposed Contractor furnished borrow area.

3.1.5.15 Enviromental Protection Plan

A proposal for implementing Section 01 57 20.00 10 ENVIRONMENTAL PROTECTION of this contract insofar as that section applies to borrow areas , when applicable. Environmental Protection provisions exclusive to the borrow area are discussed in paragraph "Submittal Package Requirements in Detail", and shall be adhered to by the Contractor.

3.1.5.16 Government Performed Environmental Assessment

The Government is required to perform an environment assessment on all new proposed borrow areas without regard to the source. For Greater New Orleans Hurricane & Storm Damage Risk Reduction (HSDRR) work, the environmental assessment is provided in an Individual Environmental Report (IER). Production and approval of an IER requires a minimum of one hundred twenty (120) days for processing, review, and approval time by the Government once all materials required from the Contractor have been provided. Before the Government will commence the environmental assessment of a proposed Contractor furnished borrow site, the Contractor must submit all of the above items as a single package. The reviewing CEMNVN staff reserves the right to disapprove the use of potential Contractor furnished borrow sources located in jurisdictional wetlands, and those sites that have significant outstanding cultural resource or hazardous waste concerns or other avoidable impacts. The Government shall be reimbursed by the Contractor for actual costs incurred for assistance in completing or attempting to complete additional environmental coordination and documentation. The Government performed environmental assessment is not required for Contractor furnished borrow utilizing one of the clay sources listed in Section 01100, paragraph "Clay Sources".

3.2 HAULING

All excavated material to be hauled to the site from the borrow source, or to be removed from the site, including debris, shall be hauled in watertight trucks with secured binders on tailgates to the place of destination. The route for trucks carrying material to and from the job site, and to and from the borrow area shall avoid residential streets, and shall be approved by the Contracting Officer. If the Contractor decides to modify or construct any new roads, they must be submitted to the Contracting Officer for approval. Trucks shall not spill or track mud on public roads. The Contractor shall take immediate action to clean up any material spilled on the roads without notification from the Contracting Officer. Failure by the Contractor to satisfactorily clean public roads used for the hauling operation shall result in the suspension of hauling operations until such roads are cleaned to the satisfaction of the Contracting Officer.

3.3 GRADE TOLERANCES

3.3.1 Excavation

All excavation shall be cut to the grades and cross sections shown on the drawings. For excavation in the borrow area, a tolerance of 5/10 of a foot above or below the prescribed grade and cross section shown will be permitted. For excavation for placement of geotextile, a tolerance of plus 2/10 of a foot above or 7/10 of a foot below the prescribed grade and cross section shown will be allowed except as noted in paragraph "Drainage of Geotextile Excavation".

3.3.2 Degrading Existing Levee

The existing levee shall remain as interim protection during construction of the new levee. Degrading shall not be conducted until the new levee design section has been completed to El. 10.0. The existing levee shall be cleared of grass vegetation prior to reuse within the new design section. The existing levee shall be degraded to the lines and slopes as indicated on the drawings. The degraded material shall be used in accordance with

Section 31 24 00.00 12 EMBANKMENT.

3.3.3 Drainage of Geotextile Excavation

The excavated area where geotextile is to be placed shall be sloped to allow for proper drainage. This slope shall remain within the allowable tolerance as prescribed in paragraph "Excavation," above.

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SECTION 31 23 16.16 12

STRUCTURAL EXCAVATION AND BACKFILL

PART 1 GENERAL

1.1 SCOPE

The work covered by this section consists of furnishing all plant, labor, materials, equipment, and performing all operations necessary for stockpiling materials, structural excavation for all incidental work specified herein or as shown on the drawings. Backfill shall be as specified in Section 31 24 00.00 12 EMBANKMENT.

1.2 MEASUREMENT AND PAYMENT

1.2.1 Structural Excavation and Backfill

No separate measurement or payment will be made for structural excavation and backfill and all costs in connection therewith shall be included in the contract price for the items of work to which the work is incidental.

1.3 REFERENCES

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

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1	(2008) Safety -- Safety and Health Requirements

1.4 QUALITY CONTROL

The Contractor shall establish and maintain quality control for excavation operations to assure compliance with contract requirements and maintain records of his 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) Structural Excavation. Check grade, slopes, and dimensions for compliance with design sections.

(3) Grade Tolerances. Check fills to determine if placement conforms to prescribed grade and design section.

(4) Construction. Layout, maintaining existing drainage, moisture control, thickness of layers, spreading and compacting.

(5) Classification of soils, placing and compacting of structural fill, and density tests.

(6) Control Testing. The Contractor shall perform all control testing

such as particle size analysis. No separate measurement and payment will be made for control testing required in this paragraph. The Contractor shall include any and all costs for control testing in the contract prices for items of work to which the work is incidental thereto.

1.4.1 Reporting

The original and two copies of these records of inspections and tests, as well as the records of corrective action taken, shall be furnished to the Government daily. Format of the report shall be as prescribed in Section 01 45 04.00 12 CONTRACTOR QUALITY CONTROL.

PART 2 PRODUCTS

2.1 MATERIALS

2.1.1 Suitable From Excavation

Material meeting the specifications of Section 31 24 00.00 12 EMBANKMENT and not classified as unsuitable, as described in paragraph UNSUITABLE MATERIALS, may be used for backfill operations.

2.2 EQUIPMENT

Equipment for compaction shall conform to the requirements herein and the applicable requirements of Section 31 24 00.00 12 EMBANKMENT.

2.2.1 Hand Tampers

Hand tamping shall be used in the compaction of structural fill within three feet of any floodwall or structure and near floodwalls and structures where vehicular equipment cannot be used. These hand tampers should be power driven, hand operated type.

2.2.2 Alternative Compaction Equipment

The Contractor may propose for use alternative types of compaction equipment not included in these specifications. The suitability of the alternative equipment must be demonstrated to the Contracting Officer's Field Representative by a field test conducted by and at the expense of the Contractor. The alternative compaction equipment must be capable of properly compacting the soil so that no planes of weakness or laminations are formed in the fill. Additionally, the alternative compaction equipment must not detrimentally affect any adjacent structure. The field test shall consist of compacting a minimum of three layers of an area of embankment with the alternative type equipment.

2.2.3 Miscellaneous Equipment

Scarifiers, disks, spring-tooth or spike-tooth harrows, spreaders, power tampers and other equipment shall be of types suitable for the required construction. Sprinkling equipment shall be designed to apply water uniformly and in controlled quantities to variable widths of surface.

PART 3 EXECUTION

3.1 STRUCTURAL EXCAVATION AND BACKFILL

3.1.1 General

The Contractor shall make all excavations required for the construction of the floodwall monoliths. Suitable material from required structural excavation shall be used in the structural backfill. Materials determined to be unsuitable by the Contracting Officer's Field Representative shall be ordered wasted without additional compensation.

3.1.2 Backfill

Backfill is defined as any soil material, which is placed within the limits of the structural excavation and the existing ground as indicated on the drawings, and as herein specified. The Contractor shall fill all excavations to grades shown on the drawings. Backfill shall not be placed against concrete structures for a minimum of 14 days after the concrete is placed. The Contractor may at his expense place fill sooner if he furnishes and tests cylinders to demonstrate that the concrete has achieved 75 percent of its design capacity.

3.1.2.1 Compacted Backfill

Compacted backfill shall be compacted in accordance with Section 31 24 00.00 12 EMBANKMENT.

3.2 UNSUITABLE MATERIALS

Materials, which are classified as unsuitable structural backfill, are defined as material containing organic matter, sticks, branches, roots, brick, concrete, rock, and other debris.

3.3 FROZEN MATERIALS

Under no circumstances shall frozen earth, snow or ice be placed in the fill. The Contracting Officer may require the wasting of frozen material.

3.4 DRESSING

The fill shall be brought to not less than the prescribed design cross section at all points. Unreasonable roughness of surface shall be dressed out to permit fertilizing and seeding operations.

3.5 SHORING

The Contractor shall provide all necessary shoring, bracing, sheeting, underpinning, and/or supports as may be required for the construction of structures. A design and the method of installing the proposed shoring shall be submitted to the Contracting Officer for approval at least 30 days prior to its actual intended use. Upon completion of the structure, the Contractor shall remove the shoring at the direction of the Contracting Officer or his representative. The void created by the shoring removal shall be backfilled and the surface area shall be treated to match the existing surface prior to the installation of the shoring. Excavations more than 5 feet deep shall be shored unless shown otherwise on the drawings. Additional requirements for shoring shall be in accordance with Section 25 "Excavations" of EM 385-1-1.

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SECTION 31 24 00.00 12

EMBANKMENT

PART 1 GENERAL

1.1 SCOPE

The work covered by this section consists of furnishing all plant, labor, equipment, and materials, except as otherwise specified in Section 31 23 00.00 12 EXCAVATION, and performing all operations in connection with foundation preparation and construction of embankments and other incidental earthwork as may be necessary to complete the embankments, as shown on the drawings, and as hereinafter specified.

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.

ASTM INTERNATIONAL (ASTM)

ASTM D 698	(2007e1) Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/cu. ft. (600 kN-m/cu. m.))
ASTM D 1140	(2000; R 2006) Amount of Material in Soils Finer than the No. 200 (75-micrometer) Sieve
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	(2006e1) 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	(2007a) Moisture, Ash, and Organic Matter of Peat and Other Organic Soils
ASTM D 3017	(2005) Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth)
ASTM D 4318	(2005) Liquid Limit, Plastic Limit, and Plasticity Index of Soils
ASTM D 4643	(2008) Determination of Water (Moisture) Content of Soil by the Microwave Oven

	Method
ASTM E 329	(2005b) Standard Specification for Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction

1.3 MEASUREMENT

1.3.1 Embankment

Unless otherwise specified, compacted fill, uncompacted fill and required fill and backfill materials of any description specified in this 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 design grade and section including allowable tolerance as indicated on the Contractor's compliance survey will not be accepted.

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 "Additional Fill" 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 design construction lines plus the tolerance permitted under paragraph "GRADE TOLERANCES". 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 Xsm/hm, where S = settlement to be computed at a break point; h = specified gross fill height at S; sm = measured or adjusted settlement gage; hm = specified gross fill height above settlement gage. Except as provided above and in paragraph "Failures," 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 "Failures," 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 shall be taken prior to moisture control operations on the existing berms. In instances where the Contractor performs moisture control after the initial gage readings were taken, the Contractor shall 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 Embankment Materials Testing

No separate measurement will be made for testing regardless of the location (i.e., in the borrow area, stockpile area, or in-place) of the material.

1.4 PAYMENT

1.4.1 Embankment

Payment for all compacted fill and uncompacted fill material placed as required in embankments, ramps, fill and backfill, and including additional material placed by reason of foundation settlement during construction, 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, testing, employ of professional engineering services, equipment and material, and performing all operations necessary for excavation, all testing, hauling, foundation preparation, material processing for moisture control and blending, 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 "GRADE TOLERANCES," or

3) failure to comply with the 72 hour requirement in paragraph "Additional Fill," for determining gage elevations, payment will be totally forfeited for the reach attributable to each gage so affected.

1.4.4 Compacted Fill Placed After Settlement Period at Westminster P.S.

Payment for compacted fill placed after settlement period as shown in in the drawings shall be as allowed under paragraph "Settlement".

1.4.5 Embankment Materials Testing

No separate payment will be made for testing. Testing shall be including in the contract unit prices for which the work is incidental thereto.

1.5 QUALITY CONTROL

1.5.1 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 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, sand content and in-place density. The results of 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. To ensure contract compliance, the Contractor shall submit the results of the control compaction curves, in-place density tests, moisture content tests, one-point compaction tests, sand content tests, and organic content tests to the Contracting Officer's representative so they can be faxed to Chief of Geotechnical Branch @ 504-862-2987. The Contractor's QC test results of in-place compaction, soil classification, moisture content, sand content, organic content, and compaction curves shall be provided to Engineering Division, Geotechnical Branch, on a regular basis throughout the contract, but no later than 5 days of receiving results. Testing shall be performed by a Government approved testing agency, organization or field laboratory 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 ". 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.

2. Control Compaction Curves - Compacted Fills. Control compaction curves shall be established in accordance with ASTM D 698 (Standard Proctor Density 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 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 and shall be made at a minimum frequency of one density test per lift per 500 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 the one-point compaction test when available or visual soil classification and soil classification test.

If the Nuclear Method is selected for field density testing, the dry density shall be determined by using the value of wet density reported by the nuclear density equipment and the value of moisture content obtained from ASTM D 2216 or ASTM D 4643. The Contractor shall not use the value of dry density reported by the nuclear density equipment.

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 nuclear density result is in doubt, the sand-cone density test shall be used for acceptance.

The correction factor shall be determined by conducting ten comparison tests (five ASTM D 2922 and five ASTM 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. The results of the in-place density, moisture content, and one point compaction test shall be reported to the Contracting Officer's representative by the end of the working day following the in-place density test.

4. One-Point Compaction Test. As a minimum, the Contractor shall perform a one-point compaction test at every fifth (5th) in-place density test. If the Nuclear Method is used for in-place testing, every other one-point compaction test shall be performed at the sand-cone verification test location on a sample from the same material location as the in-place density test in accordance with ASTM D 698. The material shall be compacted at the same water content as the field test if it is estimated to be on the dry side of optimum laboratory water content. If the field water content is estimated to be above the optimum water content, the corresponding lab sample shall be dried to an estimated water content which is not more than 3 percent dry of the actual optimum water content. The water content/dry density point on the one-point compaction test shall be plotted on the family of curves for the same soil type from the same borrow source. The compaction control curve is estimated by projecting a curve that is parallel to the adjacent compaction curves. The optimum water content and maximum dry density shall be estimated from the control compaction curve. If the laboratory data plots outside of the available family of compaction curves, the Contractor shall

perform a complete compaction test in accordance with ASTM D 698.

5. 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 "Moisture Control." Determination of moisture content shall be performed in accordance with ASTM D 2216 or ASTM D 4643. Determination of moisture content shall not be performed in accordance with ASTM D 3017(Nuclear Method).

6. In-Place Organic Content Tests. Organic content tests shall be taken at each in-place density test location. Limits of organic content are specified in paragraph MATERIALS. Determination of organic content shall be performed in accordance with ASTM D 2974, Method C.

7. Sand Content Tests. One sand content 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. Limits of sand content are specified in paragraph MATERIALS. Determination of sand content shall be in accordance with ASTM D 1140.

8. Additional Test. In addition to the above frequency of tests, additional test 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 substantially, the Contracting Office may direct additional testing.

d. Where non-traditional compaction procedures/equipment are being used.

e. When areas are found not meeting the specified in-place density, Atterberg Limits, sand content, and/or in-place organic content requirements, the Contractor shall retest at no additional cost 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.

1.5.2 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 01 45 04.00 10 CONTRACTOR QUALITY CONTROL.

1.6 QUALITY ASSURANCE

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 "General", subparagraph (10).

1.7 EQUIPMENT

1.7.1 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.

1.7.2 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.

1.7.3 Miscellaneous Equipment

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

1.7.4 Sprinkling Equipment

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

1.8 EMBANKMENT MATERIALS

1.8.1 General

The embankment shall be constructed of earth obtained from the borrow areas the existing levee and other required excavations as prescribed in Section 31 23 00.00 12 EXCAVATION and to the extent shown on the drawings.

1.8.2 Moisture Control

1.8.2.1 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 "General", subparagraph (10). The Contractor shall perform the necessary work in moisture control to bring the borrow material within the moisture content range specified in paragraph "Compaction".

Placement and Processing of Fill Material

METHOD 1 - Processing Material Outside Compacted Embankment Footprint

Borrow material is considered too wet to be placed directly upon the levee and berm(s)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. 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, before being placed within the levee or berm(s) section. 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 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 recompacted in accordance with the applicable requirements of paragraph "Compaction". Borrow material is considered too dry to be placed directly upon the levee and berm(s) compacted fill footprint, if it has a moisture content greater 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 dry, it shall be prewet in the source area, before being placed within the levee or berm(s) section. 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 "Compaction". No additional payment will be made for any moisture control required in this paragraph.

METHOD 2 - Processing Material on Berms

The Contractor may elect to place and process borrow material upon the new levee berm(s) compacted fill footprint. If the Contractor elects this method, the Contractor shall submit his placement and processing plan for approval. The Contractor shall construct the entire new protected side berm within the processing area to final grade as described in METHOD 1. The Contractor shall obtain cross sections of the processing area (pre-processing survey) prior to any processing at 100 foot intervals, but after the protected side berm is constructed to final grade. The Contractor shall then process the borrow material in lifts not to exceed one foot in thickness and shall process the material to the limits as stated in METHOD 1 to placing in section (outside the processing area) to be compacted.

The Contractor shall clearly define the processing areas with stakes, flagging, etc. The Contractor shall maintain between the processing area and other areas, canals, berms, roadways, etc. The Contractor shall not process material within 100-ft. of existing flood walls or utility crossings.

For wet material to be processed on the berm, the material shall have a moisture content no greater than 40 percentage points above the optimum moisture content resulting from the Standard Proctor Compaction Test ASTM D 698, or shall have a liquid limit no greater than 90%, whichever is smaller.

Once the Contractor no longer has use of the processing area, the Contractor shall remove any remaining material within the processing area to the elevation of the surface as surveyed in the pre-processing survey (surface of berm). The Contractor shall test and verify that the in-place density and moisture content of the upper 12 inches of the berm material are as specified in the paragraphs QUALITY CONTROL and COMPACTION. If material does not meet specifications, the Contractor shall take remedial action as described in METHOD 1.

1.8.2.2 Moisture Control - Uncompacted Fill

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

1.8.3 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 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.

1.8.4 Dressing

The entire embankment , 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

2.1 MATERIALS

The embankment shall be constructed of earth materials naturally occurring or Contractor blended. Materials that are classified in accordance with ASTM D 2487 as CL or CH with less than 35% sand content 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 in-place Plasticity Index of the material is 15 or less. Materials placed in the section must be at or above the Plasticity Index of 10. Materials placed in the section must be at or below organic content of 9 percent by weight, as determined by ASTM D 2974, Method C. Materials placed in the section must contain less than 35 percent sand content by weight, as determined by ASTM D 1140

PART 3 EXECUTION

3.1 EMBANKMENT FOUNDATION PREPARATION

3.1.1 Foundation Preparation

After clearing and grubbing and any required excavation of the embankment foundation , test pits and other similar cavities and depressions shall be broken down, where so directed, to flatten out the slopes. 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. Areas on which geotextile is to be placed shall be dressed, to provide a smooth surface within the allowable tolerance, and left unbroken. 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 the maximum allowable limits of embankment work as specified in paragraph "EMBANKMENT WORK ADVANCEMENT" in advance of the embankment construction.

3.1.2 Interm Dike

After clearing and grubbing operations and prior to levee construction, the Contractor shall be required to provide an interim dike at EL.4.0 on the flood side to keep work area dry. The Dike shall remain in place and be included as part of the design section berm, as shown on the drawings. The intermittent low lying areas shall require diking system, as determined by the Contractor and with the approval of Contracting Officer's Representative (COR). Material shall be in accordance with paragraph MATERIALS. The dike shall be a closed system in order to prevent work site flooding. The interim dike may be provided in cell increments, as needed. The Contractor shall be responsible for dewatering each site due to routine rainfall or storm events. The work associated with installation of interim dike, dewatering and maintenance shall be at no additional cost to the Government.

3.1.3 Frozen Ground

No fill shall be placed upon frozen ground.

3.2 EMBANKMENT CONSTRUCTION

3.2 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, plus or minus 3 inches tolerance, thick as specified in Section 31 05 19.05 12 REINFORCEMENT 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 grade indicated on the drawings. When placing fill on the geotextile, mechanical equipment shall not be allowed to come in contact with the geotextile in any way. Requirements for benching into the slope of the existing embankment are required in order to place and compact the material in horizontal layers as described on the drawings. Benching shall consist of excavating the existing levee embankment as shown on the drawings and described herein. The vertical face of the existing embankment resulting from the benching operation shall be a minimum of 1 foot in height but shall not exceed 2 feet in height as shown on the drawings. Material excavated from the benching operations shall be used as compacted fill. 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 except as specified in paragraph "Foundation Preparation".

3.3 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 dumped 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.

3.4 EMBANKMENT WORK ADVANCEMENT

The Contractor shall prosecute the embankment work such that no more that 5,000 linear feet of levee shall be under embankment construction at any time between the limits of the approved levee cross section that has been fertilized, seeded and mulched and the farthest extent of levee clearing ahead of the embankment work. If the Contractor elects to perform embankment work in multiple locations within the total contract length, the sum of the lengths of the multiple embankment construction locations allowed shall not exceed the above given total length of 5,000 linear feet. The limits of embankment work for each of the multiple locations as they fall within the total contract length, shall be between the limits of the approved levee cross section that has been fertilized, seeded and mulched and the farthest extent of levee clearing ahead of the embankment work as pertinent to that particular location. Between the dates 15 August

and 15 October, all of the above mentioned embankment work limits shall be reduced to 2,000 linear feet.

3.5 Embankment Sections

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

3.5.1 Zoning of Materials for Levee Construction

In general, the levee section 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.

3.6 EXISTING ACCESS ROADS, RAMPS, CROSSINGS, AND RUNWAYS

3.6.1 Access Roads

3.6.1.1 Berm Haul Road

The Contractor may construct a truck-haul runway on the protected side levee berm by placement of fill as specified in paragraph "Compacted Fill". The haul road shall be in accordance with Section 01100 GENERAL PROVISIONS paragraph "Safety Provisions" and shall be the sole responsibility of the Contractor. Settlement and repairs due to haul road operations will be the Contractor's responsibility and at no additional cost to the Government. The haul route shall be removed after completion of levee and evenly spread as to prevent ponding of water between the road and levee slope. The Contractor shall fertilize, seed and mulch all disturbed areas after grading operations. No separate measurement or payment will be made for this work. Price and payment shall be included in the unit price for "Embankment, Compacted Fill".

3.6.1.2 Watering

The Contractor shall water down the access roads that are within the construction easement area as necessary to keep dust from being blown or drifting into the adjacent subdivision areas and highway(s). The Contractor shall be responsible for providing a minimum 500-gallon capacity water truck designed to apply water uniformly in controlled quantities over variable widths of surface to control dust during construction.

3.6.1.3 Speed

Except in an emergency, all vehicles operating within the construction easement area shall not exceed 10 mph.

3.6.2 Ramps and Crossings

3.6.2.1 Ramp at C/L Sta. 56+75(+/-)

The Ramp at C/L Sta. 56+75(+/-) shall be constructed at the locations shown on the drawings by placement of fill as specified in paragraph "Compacted Fill." The ramp shall be constructed only by adding material to the levee crown and slopes. The Ramp shall have a 25-foot crown width, 1V-on-10H crown slope, and 1V-on-3H side slopes. Earthen material used for ramp construction will be included in the contract unit price for "Embankment,

Compacted Fill". Geotextile Separator fabric and 7-inch crushed stone surfacing shall be installed on the crown of the ramp. The Contractor reserves the right to modify the dimensions and/or shift the location of the ramps with the approval of the Contracting Officer Representative.

3.6.3 Runways

3.6.3.1 Temporary Runway Across Levee

Where material is hauled over an existing levee for construction, the Contractor at its expense will be permitted to construct temporary runways over the levee by the addition of material to the levee cross section. As soon as any runway has served the purpose for which it was constructed, the levee shall be restored to the prescribed grade and section, the crown resurfaced and the disturbed areas dressed, fertilized, and turfed as specified in Section 32 92 19.04 12 TURF ESTABLISHMENT AND MAINTENANCE, all at no additional cost of the Government. The restoration shall be made with embankment material, placed and compacted as provided in paragraph "Compacted Fill." Material used in the construction of the approach ramps of the runways shall be removed and may be used for borrow or spread evenly accross the berm prior to turfing, if approved by the Contracting Officer. If not approved, the material shall be disposed of as specified in Section 31 23 00.00 12 EXCAVATION. The areas on the levee slopes formerly covered by the ramps shall be shaped to design section and turfed in accordance with Section 32 92 19.04 12 TURF ESTABLISHMENT AND MAINTENANCE. No section of the levee shall be degraded or weakened to provide runways nor shall existing runways remain open during the non-work season without prior written approval of the Contracting Officer. Temporary runway/s constructed for the Contractor's convenience will not be measured for payment.

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; for uncompacted fill, at all points, a tolerance of 5/10 of 1 foot above 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 material temporarily placed within the design section shall not exceed the design grade grade by more than 0.5-feet or the design slopes of the embankment by more than 0.5-feet, and shall have side slopes not exceed the design section by more than 2.0-feet.

3.8 SETTLEMENT OF FOUNDATION

3.8.1 Additional Fill

A. 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 feet of the upper and lower limits of the work. Each gage shall be set on a smooth level surface on undisturbed ground or top of the geotextile where applicable. 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 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 "MEASUREMENT." 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. If a rotary drill is used in locating the settlement gages, it shall be advanced no closer than two feet of the anticipated settlement gage elevation. The elevation of the settlement gage shall then be determined with a sounding rod.

B. Additional fill due to foundation settlement for initial construction of the earth tie-in levee shall be as described in (A)above.

C. After settlement period as indicated in appended T-Wall drawings for compacted fill to raise the tie-in levee to final acceptance grade, if needed, shall be in accordance with all clauses of this specification considering the consolidated tie-in levee to be the existing ground condition. New existing ground cross sections shall be taken prior to beginning any reconstruction earthwork.

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.

3.8.3 Postpone Operations

Where settlement of the foundation develops to such an extent as to make it inadvisable, in the opinion of the Contracting Officer, to continue to add material, and advisable in its opinion, to postpone until a considerably later date all attempts to bring that portion of the embankment to full grade and cross section, the Contracting Officer shall have the right to omit further work on that portion of the embankment and to accept it as completed.

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 Contract Clause in Section 00700 entitled, "Changes (FAR 52.243-4)." The method of slide correction will be determined by the Contracting Officer.

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SECTION 31 41 16.00 12

STEEL SHEET PILING

PART 1 GENERAL

1.1 SCOPE

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

1.2 RELATED WORK SPECIFIED ELSEWHERE

Section 05 50 03.00 12 METALWORK FABRICATION AND MISCELLANEOUS PROVISIONS.

Section 09 97 02.01 12 PAINTING: COAL TAR EPOXY SYSTEM.

1.3 QUANTITIES

The estimated quantities of sheet piling listed in the unit price schedule of the contract as to be furnished by the Contractor are given for bidding purposes only. Sheet piling quantities for payment shall consist of the square feet of piling acceptably installed. This quantity shall consist of the lengths of piles driven below the elevations indicated for the top of piles times the length along the wall alignment as shown on the drawings plus any additions thereto resulting from changes in design or alignment as provided in paragraph DRIVING.

1.4 MEASUREMENT AND PAYMENT

1.4.1 Measurement

1.4.1.1 Driven Steel Sheet Piling

Measurement of driven steel sheet piling, except for fabricated piles (special corners, transitions, tee sections, etc.) and rolled corners, will be by the square foot of piling acceptably installed. The length of each pile driven will be measured to the nearest tenth of a linear foot and converted to square feet for payment purposes. The square footage will be determined by multiplying the number of piles times the measured length acceptably driven below the cut-off elevation shown on the drawings times the theoretical driving width of the pile. The number of piles paid for shall not exceed the number of piles indicated on the drawings. When driven piles are directed to be cut off before reaching the penetration depth shown on the drawings, that portion cut off will be measured for payment on the basis of its total length, provided that the length is not greater than the difference between the total length of piles shown on the plans for that location and the length of piles driven below the cut-off elevation. No deduction will be made for holes cut for drains and utilities in computing the area of steel sheet pile structures. The portion of any pile driven below the tip elevation shown on the drawings will not be measured for payment unless overdriving is directed by the Contracting Officer.

1.4.1.2 Pulled Piles

Piles ordered pulled will be measured for payment by the square foot. Square footage will be determined by multiplying the theoretical driving width of the pile by the length pulled above the cut-off elevation shown on the drawings. Redriving of such piles, when required, shall be measured for payment by the square foot, which shall be determined by multiplying the theoretical driving width of the pile by the length redriven below the cut-off elevation shown on the drawings.

1.4.1.3 Miscellaneous Items

No separate measurement will be made for the fabricated piles and rolled corners, sheet piling void backfill, or painting sheet piling.

1.5 PAYMENT

1.5.1 Sheet Piling

Payment for steel sheet piling, acceptably installed and measured in accordance with above paragraph DRIVEN STEEL SHEET PILING, will be made at the applicable contract unit price per square foot for "Piling, Steel Sheet, Type PZ 22" or "Piling, Steel Sheet, Type PZ 27". Price and payment shall constitute full compensation for fabricating, adding cover plates, painting, furnishing, handling, driving, cutting holes, backfilling voids, and all other work incidental to acceptably installing the steel sheet piling.

1.5.2 Fabricated Piles and Rolled Corners

No separate payment will be made for the transition piles or the rolled corners and all costs associated with fabricating, furnishing, delivering, and installing them shall be included in the contract unit cost for "Piling, Steel Sheet, Type PZ 22" or "Piling, Steel Sheet, Type PZ 27".

1.5.3 Cut-Offs and Splices

Cut-offs and/or splices which are not required under the original terms of this contract but become necessary to construct the sheet pile structures as shown on the drawings and as specified herein, and which are necessitated due to Contractor negligence in any procedure required to install such structures shall be provided at no additional cost to the Government. Cut-offs and/or splices of this type which are required through no fault of the Contractor shall be paid for by lump sum payments of $10.00 per cut-off and $25.00 per splice. Additionally, the portion of a Contractor furnished pile which is cut off when the Contractor is deemed to be not at fault, shall be paid for at 75 percent of the applicable contract unit price for the amount measured in accordance with above paragraph MEASUREMENT.

1.5.4 Pulled Piles

Piles, which are directed to be pulled and found to be in good condition, will be paid for at the contract price for furnishing and driving the pile in its original position. The cost of pulling will be paid for at 25 percent of the contract unit price and when such piles are redriven, the cost of redriving will be paid for at 25 percent of the contract unit price for that portion of the pile acceptably redriven below the cut-off elevation. When piles are pulled and found to be defective and/or damaged

due to Contractor negligence, no payment will be made for originally furnishing and driving such piles, nor for the operation for pulling. Piles replacing defective or damaged piles will be paid for at the applicable contract unit price. Piles which are pulled and found to be damaged through no fault of the Contractor, will be paid for at the applicable contract unit price for originally installing the damaged pile plus 25% of the applicable contract unit price for the cost of pulling. Subsequently, when a new pile is furnished and driven, it shall be paid for at the applicable contract unit price.

1.6 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.

ASTM INTERNATIONAL (ASTM)

ASTM A 36/A 36M	(2008) Standard Specification for Carbon Structural Steel
ASTM A 572/A 572M	(2007) Standard Specification for High-Strength Low-Alloy Columbium-Vanadium Structural Steel

1.7 QUALITY ASSURANCE

Requirements for material tests, workmanship and other measures for quality assurance shall be as specified herein and in Section 05 50 03.00 12 METALWORK FABRICATION AND MISCELLANEOUS PROVISIONS.

1.7.1 Materials Tests

Sheet piling and appurtenant materials shall be tested and certified by the manufacturer to meet the specified chemical, mechanical and section property requirements prior to delivery to the site.

1.8 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 01 33 00 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Shop Drawings; G, RO

Shop drawings for sheet piling, including fabricated sections, shall be submitted for approval and shall show complete piling dimensions and details, driving sequence and location of installed piling. Shop drawings shall include details and dimensions of templates and other temporary guide structures for installing piling, and shall provide details of the method of handling piling to prevent permanent deflection, distortion or damage to piling interlocks.

Substitute Sheet Piling Submittals; G, RO

SD-03 Product Data

Equipment Descriptions; G, RO

Complete descriptions of sheet piling driving equipment including hammers, extractors, protection caps and other installation appurtenances shall be submitted for approval prior to commencement of work.

SD-05 Design Data

Substitute Sheet Piling Submittals; G, RO

SD-06 Test Reports

Driving Records

Records of the sheet piling driving operations shall be submitted after driving is completed. These records shall provide a system of identification which shows the disposition of approved piling in the work, driving equipment performance data, piling penetration rate data, piling dimensions and top and bottom elevations of installed piling. The format for driving records shall be as directed by the Contracting Officer.

SD-07 Certificates

Materials Test Certificates

Materials test certificates shall be submitted for each shipment and identified with specific lots prior to installing piling. Identification data should include piling type, dimensions, section properties, heat analysis number, chemical composition, mechanical properties and mill identification mark.

1.9 QUALITY CONTROL

1.9.1 General

The Contractor shall establish and maintain quality control for pile driving records and operations to assure compliance with contract specifications and maintain records of his quality control for all construction operations including, but not limited to, the following:

(1) Accurate location, alignment and plumbness of piling.

(2) Full and proper engagement of interlocks.

(3) Driving (pile hammer and rate of operation).

(4) Final position; depth of penetration; tip and cut-off elevations.

(5) Uplift and vertical tolerances after driving.

(6) Location and elevation of any obstruction encountered and action directed by Contracting Officer.

(7) Pulled piles and redriving.

(8) Length of cover plate and weld size.

(9) Manufacture and driving of fabricated sections.

(10) Cutting and splicing (welding).

(11) Stockpiling and storage.

(12) Removal and disposal of damaged piles.

1.9.2 Reporting

The original and two copies of these records 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 01 45 04.00 12 CONTRACTOR QUALITY CONTROL.

1.10 DELIVERY, STORAGE AND HANDLING

Materials delivered to the site shall be new and undamaged and shall be accompanied by materials test certificates. The manufacturer's logo and mill identification mark shall be provided on the sheet piling as required by the referenced specifications. Sheet piling shall be stored and handled in the manner recommended by the manufacturer to prevent permanent deflection, distortion or damage to the interlocks. Storage of sheet piling should also facilitate required inspection activities.

PART 2 PRODUCTS

2.1 STEEL SHEET PILING

Steel for sheet piling shall conform to the requirements of ASTM A 572/A 572M, Grade 50. Sheet piling, including special fabricated sections, shall be of the type and dimensions indicated on the drawings, and be of a design such that when in place they will be continuously interlocked throughout their entire length. All sheet piling shall be provided with standard pulling holes located approximately 4 inches below the top of the pile, unless otherwise shown or directed. Steel sheet piling shall be hot rolled and shall have the properties equivalent to those listed in the following table:

PROPERTIES OF SECTIONS

Type of Section	Nominal Web Thickness (inches)	Section Modulus in^3/ft of Wall	Moment of Inertia in^4/ft of Wall	Nominal Section Depth (inches)	Minimum Interlock Strength (lbs/lin in.)	Theoretical Driving Width inches
PZ 22	0.375	18.1	84.4	9	N/A	22
PZ 27	0.375	30.2	184.2	12	N/A	18

2.1.1 Substitute Sheet Pile Sections

The Contractor may elect to substitute for the sheet piling shown on the contract drawings and specified above, in accordance with paragraphs HOT ROLLED Z-TYPE STEEL SHEET PILING, ASTM A 572/A 572M. Combinations of substitute piling types shall not be permitted.

2.1.2 Hot Rolled Z-Type Steel Sheet Piling, ASTM A 572/A 572M

At no additional cost to the Government, new Z- type hot rolled steel sheet piling conforming to ASTM A 572/A 572M Grade 50, with a minimum material thickness of .335 inches, a maximum overall width of 27 inches and having not less than the section modulus of pile being substituted.

2.1.3 Substitute Sheet Piling Submittals

When proposing substitute piling, the Contractor shall submit, for approval, the following items at no additional cost to the Government:

(1) Complete shop drawings of the proposed sections showing the dimensions and details of the alternate piling including all fabricated and corner sections.

(2) A complete layout of the alternate sheet piling. The P.I. Stations, transitions and monolith lengths shall remain unchanged.

2.2 SHEET PILING LENGTHS

All new sheet piling shall be provided in full lengths.

2.3 ROLLED CORNERS

Rolled corners, formed with new sheet piling, shall be of the types and dimensions shown on the drawings. Any proposed variations from the details shown on the drawings shall be submitted for approval of the Contracting Officer's Representative (COR). The sheet pile types shall be as required for the corners being manufactured and shall conform to the requirements of ASTM A 572/A 572M and all other requirements stated above for new piling.

2.4 FABRICATED SECTIONS

Fabricated sections, including special corners, transition piles and tee sections, shall conform to the requirements stated herein, the details shown on the drawings and the piling manufacturer's recommendations for fabricated sections. Metalwork fabrication for sheet piling sections shall conform to the requirements of Section 05 50 03.00 12 METALWORK FABRICATION AND MISCELLANEOUS PROVISIONS. Steel plates and angles used to fabricate the special sections shall conform to ASTM A 36/A 36M.

PART 3 EXECUTION

3.1 INSTALLATION

3.1.1 Placing and Driving

3.1.1.1 Placing

Any excavation required within the area where sheet pilings are to be installed shall be completed prior to placing sheet pilings. Pilings shall be carefully located as shown on the drawings or directed by the Contracting Officer. Pilings shall be placed as true to line as possible. Suitable temporary wales, templates, or guide structures shall be provided to insure that the piles are placed and driven to the correct alignment. Piles shall be placed in a plumb position with each pile interlocked with adjoining piles for its entire length, so as to form a continuous diaphragm throughout the length of each run of piling wall. Interlocks shall be

properly engaged. The Contractor's personnel shall not sit or place themselves on top of the sheet piling during the handling, installation, and removal of the piling.

3.1.1.2 Driving

All piles shall be driven to the depths shown on the drawings and shall extend to the cut-off elevation indicated. A tolerance of 1-1/2 inches above (or below) the indicated cut-off elevation will be permitted. Pilings shall be driven by approved methods so as not to subject the pilings to damage and to insure proper interlocking throughout their lengths. Pile hammers shall be maintained in proper alignment during driving operations by use of leads or guides attached to the hammer. A protecting cap shall be employed in driving, when required, to prevent damage to the tops of pilings. Pilings damaged during driving or driven out of interlock shall be removed and replaced. All piles shall be driven without the aid of a water jet, unless otherwise authorized. Adequate precautions shall be taken to insure that piles are driven plumb. Sheet piling shall not be driven more than 1/8-inch per foot out of plumb in the plane of the wall nor more than 1/8-inch per foot out of plumb perpendicular to the plane of the wall. If at any time the forward or leading edge of the piling wall is found to be out-of- plumb more than 1/8-inch per foot in the plane of the wall or 1/8-inch per foot perpendicular to the plane of the wall, the assembled piling shall be driven to the required depth and tapered pilings shall be provided and driven to interlock with the out-of- plumb leading edge or other approved corrective measures shall be taken to insure the plumbness of succeeding pilings. The maximum permissible taper for any tapered piling shall be 1 1/4 inch per foot of length. Unless specifically indicated otherwise, each run of piling wall shall be driven to grade progressively from the start and pilings in each run shall be driven alternately in increments of depth to the required depth or elevation. On each day of sheetpile driving, the Contractor shall stab only the number of piles that can be driven to grade by the end of the day, and all piling stabbed shall be driven to grade by the end of each working day except that the last two piles may remain tapered up to receive the next days piles. No pile shall be driven to a lower elevation than those behind it in the same run except when the piles behind it cannot be driven deeper or in areas where there will be wall penetrations or obstructions are encountered. In this case, piling will be allowed to remain above final grade until the obstruction is removed or the penetration is completed. Alternately, if it is determined that an obstruction cannot be removed, the Contractor shall make such changes in design alignment of the pile structure as may be deemed necessary by the Contracting Officer to insure the adequacy and stability of the structure. Payment for the additional labor and materials necessitated by such changes will be made at the applicable contract prices. If the piling next to the one being driven tends to follow below final grade, it may be pinned to the next adjacent piling. (The Contractor is advised that buried stumps or similar debris may be encountered periodically on the sheet pile wall alinement and appropriate consideration should be given to hard driving conditions should they occur.) Piles shall not be driven nor pulled within 100 feet of concrete less than 7 days old nor within 30 feet of concrete less than 28 days old.

3.1.2 Emergency Locking System on Pile Driving Head

All pile driving equipment shall be equipped so as to prevent piles from falling when a single or multiple power failure occurs after the pile driving head is attached to the pile. The jaws of vibratory hammers shall

be equipped with devices such that upon loss of hydraulic pressure, the jaws will not release the pile.

3.1.3 Cutting Off and Splicing

Piles extending above grade in excess of the specified tolerance, and which cannot be driven deeper, shall be cut off to the required grade. The Contractor shall also trim the tops of piles excessively battered during driving, when directed to do so, at no cost to the Government. Cut-offs shall become the property of the Contractor and shall be removed from the worksite. Piles driven below the elevations indicated for the top of piles and piles which, because of damaged heads, have been cut off to permit further driving and are then too short to reach the required top elevation, shall be extended to the required top elevation by welding an additional length, when directed, without cost to the Government. Should splicing of additional lengths be necessary, the splice shall consist of an approved butt joint with a weld that fully penetrates the web. Welded extensions shall be a minimum of 6 inches in length. Piles adjoining spliced piles shall be full length unless otherwise approved. When piles are to be driven in sections and spliced together, they shall be delivered on site in full lengths and cut for splicing only after delivery. Only those portions of the originally uncut pile shall be spliced together to form the final in-place full-length pile. Splices for these piles shall conform to the details shown on the drawings. Welding of splices shall conform to the requirements of Section 05 50 03.00 12 METALWORK FABRICATION AND MISCELLANEOUS PROVISIONS. Ends of pilings to be spliced together shall be squared before splicing to eliminate dips or camber. Pilings shall be spliced together with concentric alignment of the interlocks so that there are no discontinuities, dips or camber at the abutting interlocks. Spliced pilings shall be free sliding and able to obtain the maximum swing with contiguous pilings. The Contractor may cut holes in the piles for bolts, rods, drains or utilities at locations and of sizes shown on the drawings or as directed. All cutting shall be done in a neat and workmanlike manner. Bolt holes in steel piling shall be drilled or may be burned and reamed by approved methods, which will not damage the remaining metal. Holes, other than bolt holes, shall be reasonably smooth and of the proper size for rods and other items to be inserted.

3.1.4 Inspection of Driven Piling

The Contractor shall inspect the interlocked joints of driven pilings extending above ground. Pilings found to be damaged or driven out of interlock shall be removed and replaced.

3.1.5 Pulling and Redriving

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

3.1.6 Void Backfill

Where voids adjacent to the steel sheet piling are induced by pile driving or pulling operations, the Contractor shall pump out all seepage and rain water and backfill with a tremie-placed slurry. The slurry shall consist of one part cement, two parts bentonite, and six parts sand mixed with

enough water to produce a slurry viscous enough to thoroughly fill the voids.

3.1.7 Painting

Piling shall be painted as indicated on the drawings and shall be done in accordance with Section 09 97 02.01 12 PAINTING: COAL TAR EPOXY SYSTEM. The unpainted portion of sheet piling which are to be embedded in concrete shall be free from surface contaminants such as oil, loose particles, or similar debris that would prohibit bonding between the concrete and sheet piling.

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SECTION 31 62 16.00 12

STEEL H-PILES

PART 1 GENERAL

1.1 SCOPE

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

1.2 MEASUREMENT AND PAYMENT

1.2.1 Measurement

1.2.1.1 Furnishing and Delivering Piles

Steel H-piles will be measured for payment for furnishing and delivering by the linear foot of piles required as shown on the drawings. Steel H-piles will be measured for payment on the basis of lengths, to the nearest tenth of a linear foot, along the axis of each pile complete in place below the top elevation shown in the Contract Drawings. No payment will be made for lengths of piles exceeding required lengths.

1.2.1.2 Driving

Permanent piles will be measured for payment for driving on the basis of lengths, to the nearest tenth of a linear foot, along the axis of each pile acceptably in place below the cut-off elevation. Pulled piles, when directed by the Contracting Officer, shall be measured for payment on the basis of lengths along the axis of the pile pulled. Redriving of pulled piles shall be measured for payment on the basis of lengths along the axis of the redriven pile.

1.2.2 Payment

1.2.2.1 Furnishing and Delivering Piles

Payment for furnishing and delivering the required lengths of steel H-piles will be made at the contract unit price per linear foot for “Furnish and Deliver Steel H-Pile (HP 14X73)”. Price and payment shall constitute full compensation for all cost of furnishing and painting H-Piles, delivering to the job site, splicing, and furnishing and installing tension connections and other miscellaneous metals.

1.2.2.2 Driving Piles

Payment for driving permanent piles will be made at the contract unit price per linear foot for “Drive Steel H-Pile (HP 14X73)”. Prices and payments shall constitute full compensation for handling, driving, measuring heave, redriving heaved piles, cutting off piles at the cutoff elevation, compiling driving records, backfilling voids around piles, and any other items incidental to driving piles to the required elevation.

1.2.2.3 Pulled Piles

a. Sound Piles: Piles, which are directed to be pulled and found to be in good condition, will be paid for at the contract price for driving the pile in its original position. The cost of pulling will be paid for at 50 percent of the contract unit price for driving, and when such piles are redriven, the cost of redriving will be paid for at 50 percent of the contract unit price for driving for that portion of the pile acceptably redriven below the cut-off elevation. Piles which are pulled and found to be damaged through no fault of the Contractor will be paid for at the contract unit price for originally installing the damaged pile plus 50 percent of the contract unit price for driving for the cost of pulling. Subsequently, when a new pile is furnished and driven, it shall be paid for at the contract unit price for furnishing and delivering the pile, and for driving the pile.

b. Damaged Piles: When piles are pulled and found to be defective and/or damaged due to Contractor negligence, no payment will be made for originally driving such piles, or for the operation for pulling. Piles replacing defective or damaged piles will be provided at no additional cost to the Government. The cost of acceptably driving the replacement piles will be paid for at the contract unit price for installing the piles.

c. Misaligned or Misplaced Piles: When a pile is driven but not acceptably placed or driven out of alignment and pulled at the direction of the Contracting Officer, no payment will be made for either driving such pile or for the operation of pulling. If the pile is undamaged and it is acceptably redriven at the direction of the Contracting Officer, it will then be paid for at the contract unit price for driving. If damaged, it shall be replaced by a new pile at no additional cost to the Government, which will then be paid for at the contract unit price for driving.

1.3 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.

ASTM INTERNATIONAL (ASTM)

ASTM A 572/A 572M	(2007) Standard Specification for High-Strength Low-Alloy Columbium-Vanadium Structural Steel

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1	(2008) Safety -- Safety and Health Requirements

1.4 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. The following shall be submitted in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Equipment Description; G, RO

Complete descriptions of pile driving equipment including hammers, extractors, protection caps and other installation appurtenances shall be submitted for approval prior to commencement of work.

SD-02 Shop Drawings

Shop Drawings; G, RO

Shop drawings for H-piling shall show complete dimensions and details of piling and shall show the driving sequence and location of piling. Shop drawings shall include details and dimensions of templates and other temporary guide structures for installing the piling, and shall provide details of the method of handling piling to prevent permanent deflection.

SD-06 Test Reports

Driving Records

Records of the pile driving operations shall be submitted after driving is completed. These records shall provide a system of identification which shows the disposition of approved piling in the work, driving equipment performance data, piling penetration rate data, piling dimensions and top and bottom elevations.

SD-07 Certificates

Material Tests

Material test certificates shall be submitted for each shipment and identified with specific lots prior to installing piling. Identification data should include piling type, dimensions, chemical composition, mechanical properties, section properties, heat number and mill identification mark.

1.5 QUALITY CONTROL

1.5.1 General

The Contractor shall establish and maintain quality control for pile driving operations to assure compliance with contract specification and maintain records of his quality control for all construction operations including, but not limited to, the following:

(1) Driving of H-piling. The driving records shall include the pile number or identification, location, size, length, elevation of tip, cut-off and top of pile, the number of blows and ram drop (in inches) required for each foot of penetration throughout the entire length of the pile, and the number of blows per inch for the last 18 inches of penetration. The record shall include the type and size of the hammer, the rate of operation, the type and dimensions of driving helmet, the cap-block and pile cushion used. The location and elevation of any obstruction or unusual occurrence encountered during driving shall be

recorded and immediately reported to the Contracting Officer. His directed action shall also be recorded.

(2) Recording uplift and vertical tolerances after driving, pulled and redriven piles, and removal and disposal of damaged piles.

(3) Cutting and splicing of piling (welding).

(4) Plumbness of piling.

(5) Penetration depth.

(6) Stockpiling.

1.5.2 Reporting

The original and two copies of these records and tests, as well as the records of corrective action taken, shall be furnished to the Government daily. Format of the report shall be as prescribed in Section 01 45 04.00 12 CONTRACTOR QUALITY CONTROL.

1.6 QUALITY ASSURANCE

Requirements for material tests, workmanship and other measures for quality assurance shall be as specified herein and in Section 05 50 03.00 12 METALWORK FABRICATION AND MISCELLANEOUS PROVISIONS. The Contractor shall provide an equipment description to ensure proper methods are being used. All steel H-piling and appurtenant materials shall be tested and certified by the manufacturer to meet the specified chemical, mechanical and section property requirements prior to delivery to the site.

1.7 DELIVERY, STORAGE AND HANDLING

Materials delivered to the site shall be in a new and undamaged condition and shall be accompanied by certified test reports. The manufacturer's logo and mill identification mark shall be stamped on each unspliced piling at a minimum of two locations. All piling shall be stored and handled in the manner recommended by the manufacturer to prevent permanent deflection, distortion or damage to the interlocks. Storage of piling should also facilitate required inspection activities.

PART 2 PRODUCTS

2.1 MATERIALS

Steel for H-piling shall conform to the requirements of ASTM A 572/A 572M, Grade 50. The H-piling shall be of the shape and sections shown on the shop drawings. Piling shall have standard square ends, unless otherwise specified or directed. Lengths of piling shall be as shown on the drawings. All steel H-piling shall be furnished full length, or as applicable to meeting shipping requirements. Splicing may be required.

PART 3 EXECUTION

3.1 PLACING

H-piling shall be driven as accurately as practicable in the correct locations, true to line both laterally and longitudinally and to the vertical or batter lines, all as indicated in the drawings. A lateral

deviation from the correct location at the cut-off elevation of not more than 3 inches will be permitted. A variation in slope of not more than 1/4-inch per foot of longitudinal axis will be permitted. The correct relative position of group piling shall be maintained by the use of templates or by other approved means. Any H-pile driven out of correct location shall be pulled and redriven by the Contractor at no additional cost to the Government.

3.2 DRIVING

H-piling shall be driven by an approved steam, air or diesel drop, single acting, double-acting, or differential- acting pile driving hammer. The size and capacity of the hammer shall be as recommended by the manufacturer for the pile weights and soil formations to be penetrated. No drilling or jetting will be allowed before or during driving operations. The hammer shall be operated at all times at the steam or air pressure and at the speed recommended by the manufacturer. Boiler or compressor capacity shall be sufficient to operate the hammer continuously at full rated speed. To determine ram drop, the Contractor shall attach a scale (in inches) to the pile hammer and an indicator on the pile ram (see drawing at end of this section). Installation of both devices shall be in such a manner that displacement of the ram will be indicated on the scale. Both the scale and the indicator shall be easily legible to observers on the ground during operations. Piling shall be protected during driving by a cushion and cap of approved design. Pile drivers shall have firmly supported leads extending to the lowest point the hammer must reach to maintain the hammer in proper alignment at all times. Each pile shall be driven continuously and without voluntary interruption except for splicing until the required depth of penetration has been attained. Deviation from this procedure will be permitted only in case the driving is stopped by causes which could not reasonably have been anticipated. Splicing of H-piling may be required. A maximum of one splice per pile will be allowed. Pile splices are not allowed in the upper third of the pile or above the sheet pile cutoff tip elevation in the monolith under consideration. Minimum clear distances between the pile driving equipment and the distribution and transmission lines shall be in accordance with EM 385-1-1. The piling shall be spliced as shown on the construction drawings. Any pile that cannot be driven to the required depth because of an obstruction shall, as directed by the Contracting Officer, be pulled and another pile driven adjacent thereto, be cut off and used, or be abandoned as directed by the Contracting Officer. The Contractor shall make observations to detect any uplift of piling already driven and uplifted piling shall be backdriven to the original penetration, at no additional cost to the Government. Piling shall not be driven within 100 feet of concrete less than 7 days old nor within 30 feet of concrete less than 28 days old. The Contractor shall provide every facility for the Contracting Officer to inspect and record data relative to pile driving operations. This data shall include blows and ram drop (in inches) per foot of pile penetration, final tip elevation, and blows per inch prior to seating.

3.2.1 Scale

A scale (inches) shall be fixed to the hammer's ram guide and a pointed indicator on the ram, near the scale, to allow a reading of the ram drop (see example diagram at the end of this section). Installation of both scale and indicator shall be in such a manner that the drop of the ram can be read by observing the highest and the lowest position of the indicator and scale. Both the scale and the indicator shall be easily legible to observers on the ground during operations. The Contractor shall record in

the pile driving record the ram drop of the pile hammer when recording the blows per foot as specified in paragraph DRIVING.

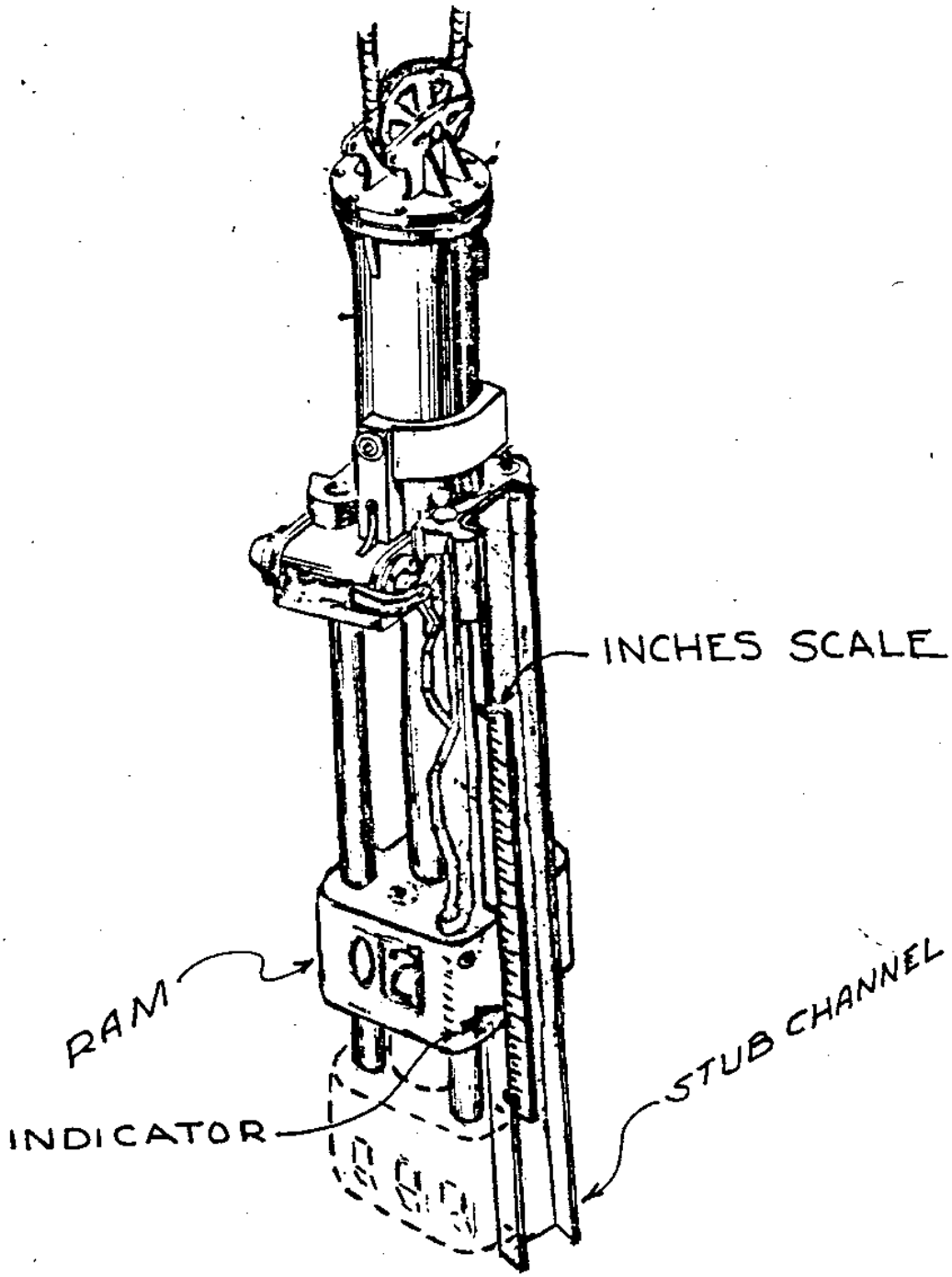
3.2.2 Void Backfill

Voids occurring around piles as a result of pile driving or due to any other cause and abandoned holes for piles that have been pulled shall be filled to within 3 feet of the adjacent ground surface with a tremie-placed slurry (from bottom to top of hole). The slurry shall consist of one part portland cement, two parts bentonite, and six parts sand mixed with enough water to produce a slurry viscous enough to thoroughly fill the voids. The upper 3 feet of the hole shall be filled with earth and compacted to the same density as the surrounding soil.

3.3 DAMAGED AND MISPLACED PILING

Any pile which is damaged because of internal defects or by improper handling or driving, or which is otherwise damaged by fault of the Contractor so as to impair it for its intended use, or any pile driven out of proper location, shall be removed and replaced. All work of removal and cost of replacement shall be borne by the Contractor at no additional expense to the Government. The Contracting Officer may require the Contractor to pull certain selected piling after driving for inspection to determine the condition of the piling. Any pile so pulled and found to be damaged to such extent as, in the opinion of the Contracting Officer, would impair its usefulness in the completed structure, shall be removed from the site of the work and the Contractor shall furnish and drive a new pile to replace the damaged pile. Piling pulled and found to be sound and in a satisfactory condition as determined by the Contracting Officer's Representative shall be redriven. Any holes which remain as a result of pulling operations shall be filled as specified in paragraph VOID BACKFILL.

-- End of Section --



PILE HAMMER

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SURFACING (GRANULAR)

PART 1 GENERAL

1.1 SCOPE

The work covered by this section consists of furnishing all plant, labor and materials and performing all work necessary to construct and maintain surfacing for ramps and driveways as indicated on the drawings.

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.

ASTM INTERNATIONAL (ASTM)

ASTM C 88	(2005) Standard Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate
ASTM C 117	(2004) Standard Test Method for Materials Finer than 75-um (No. 200) Sieve in Mineral Aggregates by Washing
ASTM C 131	(2006) Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
ASTM C 136	(2006) Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates
ASTM D 4318	(2005) Liquid Limit, Plastic Limit, and Plasticity Index of Soils
ASTM D 75	(2003) Standard Practice for Sampling Aggregates
ASTM E 329	(2005b) Standard Specification for Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction

1.3 MEASUREMENT

1.3.1 Ramps and Driveways

Surfacing material required for the ramps and driveways as shown on the drawings, including their maintenance with the limitations specified in paragraph "MAINTENANCE," shall be measured by the cubic yard satisfactorily

placed.

1.3.1.1 Vehicle Delivery

Measurement will be made by the cubic yard in approved vehicles at the site of the work. Allowance will not be made for wastage or shrinkage during transportation from car or other point of loading. Approved vehicles for this purpose may be of any type acceptable to the Contracting Officer. The body shall be that of any shape that the actual delivered contents may be readily and accurately determined and will remain constant. Unless all approved vehicles for the work are of uniform capacity, each vehicle must bear a plainly legible identification mark indicating its approved capacity. The Government may reject all loads hauled in non-approved vehicles. Upon delivery of each load at the jobsite and prior to the Contractor's measurement of each load, the Contractor shall "level-off" each load within the approved vehicles so that an accurate measurement of each load can be made. After leveling off the load, the Contractor's Quality Control personnel shall measure each load at the site of work. The Government will inspect each load, check its yardage and witness the Contractor's measurement of each load.

1.4 PAYMENT

1.4.1 Ramps and Driveways

Payment for the surfacing material required for the ramps and driveways as shown on the drawings, including their maintenance with the limitations specified in paragraph "MAINTENANCE" will be made at the contract unit price per cubic yard for "Surfacing". Price and payment shall constitute full compensation for subgrade preparation; furnishing all plant, labor, equipment, and materials; placing, spreading, compacting, and maintenance as shown on the drawings and specified herein.

1.5 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. The following shall be submitted in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-06 Test Reports

Sampling and Testing; G

Certified LA abrasion, Atterberg limits, soundness and gradation test results of surfacing material shall be submitted to the Contracting Officer's Representative (COR) for approval prior to shipment.

1.6 QUALITY CONTROL

1.6.1 General

The Contractor shall establish and maintain quality control for the surfacing operations to assure compliance with contract specifications and maintain records of his quality control for all construction operations including but not limited to compliance with surfacing standards, quality and gradation of surfacing, thickness of surfacing prior to compaction, and

width and location of the roadway in relation to the new levee centerline and levee crown.

1.6.2 Sampling and Testing

Sampling and testing shall be the responsibility of the Contractor and shall be performed at no additional cost to the Government. Sampling and testing shall be performed by an approved commercial testing laboratory or by the Contractor, subject to approval. If the Contractor elects to establish its own testing facilities, approval of such facilities will be based on compliance with ASTM E 329. No work requiring testing will be permitted until the Contractor's facilities have been inspected and approved.

1.6.2.1 Sampling

Sampling of material shall be performed in conformance with ASTM D 75. Sampling will be observed by the Contracting Officer's Representative.

1.6.2.2 Testing

Testing of surfacing materials shall be performed at a minimum frequency of one set of tests per 2500 cubic yards or fraction thereof of surfacing material placed. Testing of surfacing materials shall include gradation and Atterberg limit testing as indicated in paragraph(s) "Crushed Stone". Test performance shall be pursued in such a manner that the results are obtained in the minimum time frame. All test results shall be furnished to the Contracting Officer's Representative to confirm materials' compliance with the specifications. Surfacing materials not meeting the specifications shall be removed from the site and replaced with surfacing materials meeting the specifications.

1.6.3 Reporting

The original and two copies of these records, 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 01 45 04.00 10 CONTRACTOR QUALITY CONTROL.

PART 2 PRODUCTS

2.1 SURFACING

Surfacing material shall be the following:

2.1.1 Crushed Stone

Crushed stone from the sources listed in Section 01100 GENERAL PROVISIONS, paragraph entitled "STONE SOURCES" shall consist of 100 percent stone and shall meet the following requirements when tested in accordance with ASTM C 136 and ASTM C 117, Procedure B :

U.S. Sieve	Percent Passing
1-1/2-inch	100
3/4-inch	50 - 100
No. 4	35 - 65
No. 40	10 - 32

No. 200	3 - 15

The fraction of material passing the No. 40 sieve shall conform to the following requirements when tested in accordance with ASTM D 4318:

Liquid Limit (Max.)	25
Plasticity Index (Max.)	4

Crushed stone shall show an abrasion loss of not more than 40 percent when tested in accordance with ASTM C 131 and a soundness loss of not more than 15 percent when subjected to 5 cycles of the magnesium sulfate soundness test in accordance with ASTM C 88.

PART 3 EXECUTION

3.1 BASE PREPARATION

Prior to placement of the surfacing as indicated on the drawings, all debris shall be removed from the area to receive the surfacing. Base preparation for the entire ramps and driveways shall be completed in advance of placing surfacing.

3.2 PLACEMENT AND COMPACTION

The placement of surfacing shall not commence until all slope operations in the area have been finalized, including final dressing of the levee crown. No surfacing shall be placed or compacted on a muddy or rutted subgrade. The surfacing material shall be compacted to provide a smooth, uniform, closely-knit riding surface free from ridges and depressions. Compaction shall be performed by making two or more passes with a rubber-tired roller. The surfaced area shall have, 7-inches of crushed stone (loose measurement). Any damage to the finished surfacing by the Contractor's construction operations shall be repaired by the Contractor at no expense to the Government.

3.2.1 Shaping

The surface course shall be shaped by the use of a blade grader or other suitable means. Any ruts formed shall be shaped as often as necessary to prevent breaking through the surfacing material into the subgrade or into the geotextile fabric. Holes, waves, and deficiencies in thickness, which may develop and are not filled by shaping, shall be filled by adding more material. Shaping shall continue until the surface is free from ruts, waves, and undulations.

3.2.2 Rollers

The minimum requirements for rubber-tired rollers to be used for compaction will be a 10-ton, 11-wheel, 7.50 x 15 tires, towed type, tandem pneumatic-tired roller. All rollers shall be towed at speeds not to exceed 5 miles per hour.

3.3 MAINTENANCE

The ramps and driveways shall be maintained by such shaping and addition of surfacing material as directed by the Contracting Officer to provide a usable and driveable road under all weather conditions during the construction period. No additional payment will be made for shaping

operations. Additional surfacing materials required to repair any damages to the finished surfacing occasioned by the Contractor's construction operations will not be measured for payment. Additional surfacing materials required to repair any damages to the finished surfacing not occasioned by the Contractor's construction operations will be measured for payment. -- End of Section --

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SECTION 32 31 13

CHAIN LINK FENCES AND GATES

PART 1 GENERAL

1.1 SCOPE

The work provided herein consists of the Contractor furnishing all plant, labor, equipment, and materials, and performing all operations necessary to erect chain link fences and gates as specified herein and as indicated on the drawings.

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.

ASTM INTERNATIONAL (ASTM)

ASTM A 116	(2005) Standard Specification for Metallic-Coated, Steel Woven Wire Fence Fabric
ASTM A 121	(2007) Standard Specification for Metallic-Coated Carbon Steel Barbed Wire
ASTM A 153/A 153M	(2005) Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware
ASTM A 702	(1989; R 2006) Standard Specification for Steel Fence Posts and Assemblies, Hot Wrought
ASTM A 780	(2001; R 2006) Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings
ASTM A 90/A 90M	(2007) Standard Test Method for Weight Mass of Coating on Iron and Steel Articles with Zinc or Zinc-Alloy Coatings
ASTM C 94/C 94M	(2009) Standard Specification for Ready-Mixed Concrete
ASTM F 1043	(2006) Strength and Protective Coatings on Metal Industrial Chain-Link Fence Framework
ASTM F 1083	(2006) Standard Specification for Pipe, Steel, Hot-Dipped Zinc Coated (Galvanized) Welded, for Fence Structures
ASTM F 567	(2007) Standard Practice for Installation of Chain Link Fence

ASTM F 626	(1996a; R 2003) Standard Specification for Fence Fittings
ASTM F 883	(2004) Padlocks

U.S. GENERAL SERVICES ADMINISTRATION (GSA)

FS RR-F-191/3	(Rev D) Fencing, Wire and Post, Metal (Chain-Link Fence Posts, Top Rails and Braces)
FS RR-F-191/4	(Rev D) Fencing, Wire and Post, Metal (Chain-Link Fence Accessories)

1.3 MEASUREMENT AND PAYMENT

1.3.1 Chain Link Fencing

Measurement for chain link fence will be be made by the linear foot satisfactorily installed. Payment for chain link fencing will be made at the contract unit price per linear foot for "Chain Link Fence". Price and payment shall constitute full compensation for furnishing all plant, labor, materials, and equipment for installation of the chain link fence as specified herein and as shown on the drawings.

1.3.2 Gates

Measurement for the gate will be made by each satisfactorily installed. Payment for the gates will be made at the contract unit price per each for "Chain Link Fence Gate, 5 Foot". Price and payment shall constitute full compensation for furnishing all plant, labor, materials, and equipment for installation of the gates as specified herein and as shown on the drawings.

1.4 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 01 33 00 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Submit Erection/Installation Drawings for the following items in accordance with paragraph entitled, "Assembly and Installations Instructions," of this section.

Fence Assembly
Location of Gate, Corner, End, and Pull Posts
Gate Assembly
Gate Hardware and Accessories

SD-03 Product Data

Submit Manufacturer's catalog data for the following items:

Fence Assembly
Gate Assembly

Gate Hardware and Accessories

SD-04 Samples

Contractor must submit the following samples described within this section:

Fabric
Posts
Braces
Line Posts
Sleeves
Top Rail
Tension Wire
Barbed Wire
Barbed Wire Supporting Arms
Stretcher Bars
Gate Posts
Gate Hardware and Accessories
Padlocks
Wire Ties

SD-07 Certificates

Submit Certificates of compliance in accordance with the applicable reference standards and descriptions of this section for the following items:

Zinc Coating
Fabric
Barbed Wire
Stretcher Bars
Gate Hardware and Accessories
Concrete

SD-08 Manufacturer's Instructions

Submit Manufacturer's instructions for the following items:

Fence Assembly
Gate Assembly
Hardware Assembly
Accessories

1.5 ASSEMBLY AND INSTALLATION INSTRUCTIONS

Contractor must provide manufacturer's instructions that detail proper assembly and materials in the design for fence, gate, hardware and accessories.

Submit Erection/Installation drawings along with manufacturer's catalog data for Complete fence assembly, gate assembly, hardware assembly and accessories.

1.6 DELIVERY, STORAGE, AND HANDLING

Deliver materials to site in an undamaged condition. Store materials off the ground to provide protection against oxidation caused by ground contact.

1.7 QUALITY ASSURANCE

1.7.1 Required Report Data

Submit reports of listing of chain-link fencing and accessories regarding weight in ounces for zinc coating.

PART 2 PRODUCTS

2.1 GENERAL

Provide fencing materials that conform to the requirements of ASTM A 116, ASTM A 702, ASTM F 626, and as specified.

2.2 ZINC COATING

Ferrous-metal components and accessories, except as otherwise specified, must be hot-dip galvanized after fabrication.

Provide zinc coating of weight not less than 1.94 ounces per square foot, as determined from the average result of two specimens, when tested in accordance with ASTM A 90/A 90M.

Provide zinc coating that conforms to the requirements of the following:

Pipe: FS RR-F-191/3 Class 1 Grade A in accordance with ASTM F 1083.

Hardware and accessories: ASTM A 153/A 153M, Table 1

Surface (ASTM F 1043):

External: Type B-B surface zinc with organic coating, 0.97 ounce per square foot minimum thickness of acrylated polymer.

Internal: Surface zinc coating of 0.97 ounce per square foot minimum.

Provide galvanizing repair material that is cold-applied zinc-rich coating conforming to ASTM A 780.

2.3 FABRIC

Fabric must consist of No. 9-gage wires woven into a 2-inch diamond mesh, with dimensions of fabric and wire conforming to ASTM A 116, ASTM A 702 and ASTM F 626, with 1.29 ounces per square foot zinc galvanizing.

Fence heights to 12 feet must have one-piece fabric widths.

2.4 TOP AND BOTTOM SELVAGES

Fabric with 2 inch mesh and up to 60 inches high must be knuckled on both top and bottom selvages, over if 60 inches high, it must be twisted and barbed on the top selvage and knuckled on the bottom selvage.

Knuckle top and bottom selvages for 1-3/4-inch and 1-inch mesh fabric.

2.5 POSTS, TOP RAILS, BOTTOM RAILS AND BRACES

FS RR-F-191/3 line posts; Class 1, steel pipe, Grade A. End, corner, and pull posts; Class 1, steel pipe, Grade A. Braces and rails; Class 1, steel

pipe, Grade A or B 2, aluminum pipe or 3, formed steel sections, in minimum sizes listed in FS RR-F-191/3 for each class and grade.

2.5.1 Accessories

Provide barbed wire supporting arms of the single, 45 degree outward angle 3-strand, arm type and of the design required for the post furnished. Secure arms by riveting.

2.6 LINE POSTS

Minimum acceptable line posts must be as follows:

Up to 6-feet high:

Grade A: 1.900 inch O.D. pipe weighing 2.72 pounds per linear foot.

Over 6-feet high:

2.0 inch O.D. pipe weighing 3.65 pounds per linear foot.

2.7 END, CORNER, AND PULL POSTS

Provide minimally acceptable end, corner, and pull posts as follows:

Up to 6 feet high:

Grade A: 2.375 inch O.D. pipe weighing 3.65 pounds per linear foot.

Over 6 feet high:

Grade A: 2.875 inch O.D. pipe weighing 5.79 pounds per linear foot.

2.8 SLEEVES

Provide sleeves for setting into concrete construction of the same material as post sections. Size must be 1-inch greater than the diameter or dimension of the post. Weld flat plates to each sleeve base to provide anchorage and prevent intrusion of concrete.

2.9 TOP RAIL

Rails must be a minimum of 1.660 inches O.D. pipe Grade A weighing 2.27 pounds per linear foot. Provide expansion couplings 6-inches long at each joint in top rails.

2.10 CENTER RAILS BETWEEN LINE POSTS

For fencing over 6-feet high, center rails must be 1.660 inches O.D. pipe Grade A weighing 2.27 pounds per linear foot.

2.11 POST-BRACE ASSEMBLY

Bracing must consist of 1.660 inches O.D. pipe Grade A weighing 2.27 pounds per linear foot and 3/8 inch adjustable truss rods and turnbuckles.

2.12 BARBED WIRE

Provide barbed wire conforming to ASTM A 121 zinc-coated, Type Z, Class 3,

or aluminum-coated, Type A, with 12.5 gauge wire with 14 gauge, round, 4-point barbs spaced no more than 5 inches apart.

2.13 TENSION WIRE

Wire must be galvanized, No. 7-gage, coiled spring wire, provided at the bottom of the fabric only. Provide Zinc Coating that weighs not less than 1.6 ounces per square foot.

2.14 STRETCHER BARS

Provide bars that have one-piece lengths equal to the full height of the fabric with a minimum cross section of 3/16 by 3/4 inch, in accordance with ASTM A 116, ASTM A 702 and ASTM F 626.

2.15 POST TOPS

Provide tops that are steel, wrought iron, or malleable iron designed as a weathertight closure cap. Provide one cap for each post, unless equal protection is provided by a combination post-cap and barbed-wire supporting arm. Caps must have an opening to permit through passage of the top rail.

2.16 STRETCHER BAR BANDS

Provide bar bands for securing stretcher bars to posts that are steel, wrought iron, or malleable iron spaced not over 15 inches on center. Bands may also be used in conjunction with special fittings for securing rails to posts. Provide bands with projecting edges chamfered or eased.

2.17 GATE POSTS

Provide a gate post for supporting each gate leaf as follows:

Up to 6-feet wide:

2.875 inch O.D. pipe Grade A weighing 5.79 pounds per linear foot.

Over 6 feet wide and up to 13 feet wide:

2.875 inch O.D. pipe Grade A weighing 5.79 pounds per linear foot. Grade B weighing 4.64 pounds per linear foot.

2.18 GATES

For gate leaves up to 6-feet high or 6-feet wide, perimeter gate frames must be 1.66 inch O.D. pipe Grade A weighing 2.27 pounds per linear foot.

For gate leaves over 6 feet high or 6 feet wide, perimeter gate frames must be 1.90 inch O.D. pipe Grade A weighing 2.72 pounds per linear foot.

Provide gate frame assembly that is welded or assembled with special malleable or pressed-steel fittings and rivets to provide rigid connections. Install fabric with stretcher bars at vertical edges; stretcher bars may also be used at top and bottom edges. Attach stretcher bars and fabric to gate frames on all sides at intervals not exceeding 15 inches. Attach hardware with rivets or by other means which provides equal security against breakage or removal.

Diagonal cross-bracing, consisting of 3/8-inch diameter adjustable-length

truss rods on welded gate frames, must be provided where necessary to obtain frame rigidity without sag or twist. Provide nonwelded gate frames with diagonal bracing.

2.19 GATE HARDWARE AND ACCESSORIES

Provide gate hardware and accessories that conforms to ASTM A 116, ASTM A 702, ASTM F 626, and be as specified:

Provide malleable iron hinges to suit gate size, non-lift-off type, offset to permit 180-degree opening.

Provide latch that permits operation from either side of the gate, with a padlock eye provided as an integral part of the latch.

Provide stops and holders of malleable iron for vehicular gates. Provide stops that automatically engage the gate and hold it in the open position until manually released.

Provide double gates with a cane bolt and ground-set keeper, with latch or locking device and padlock eye designed as an integral part.

2.20 MISCELLANEOUS HARDWARE

Provide miscellaneous hot-dip galvanized hardware as required.

2.21 WIRE TIES

Wires for tying fabric to line posts must be 16-gage galvanized steel wire spaced 12 inches on center. For tying fabric to rails and braces, wire ties must be spaced 24 inches on center. For tying fabric to tension wire, 0.105-inch hog rings must be spaced 24 inches on center.

Manufacturer's standard procedure will be accepted if of equal strength and durability.

FS RR-F-191/4. Provide wire ties constructed of the same material as the fencing fabric.

2.22 CONCRETE

Provide concrete conforming to ASTM C 94/C 94M. Concrete mix must obtain a minimum 28-day compressive strength of 3,000 psi.

2.23 GROUT

Provide grout of proportions one part portland cement to three parts clean, well-graded sand and a minimum amount of water to produce a workable mix.

2.24 PADLOCKS

Provide padlocks conforming to ASTM F 883, with chain.

PART 3 EXECUTION

Completed installation must conform to ASTM F 567.

3.1 GENERAL

Final grading and established elevations must be complete prior to commencing fence installation.

3.2 EXCAVATION

Excavations for post footings must be drilled holes in virgin or compacted soil, of minimum sizes as indicated.

Space footings for line posts 10 feet on center maximum and at closer intervals when indicated.

Bottoms of the holes must be approximately 3-inches below the bottoms of the posts. Set bottom of each post not less than 36-inches below finished grade when in firm, undisturbed soil. Set posts deeper, as required, in soft and problem soils and for heavy, lateral loads.

Soil from excavations must be spread uniformly adjacent to the fence line or on areas of Government property, as directed.

3.3 SETTING POSTS

Remove loose and foreign materials from holes and the soil moistened prior to placing concrete.

Provide tops of footings that are trowel finished and sloped or domed to shed water away from posts. Set hold-open devices, sleeves, and other accessories in concrete.

Keep exposed concrete moist for at least 7 calendar days after placement or cured with a membrane curing material, as approved.

Posts set in concrete construction must be set vertically, with tops aligned and held in position until concrete has set.

3.3.1 Earth

Provide concrete bases of dimensions indicated. Compact concrete to eliminate voids, and finish to a dome shape.

3.3.2 Concrete Slabs and Walls

Set posts into zinc-coated sleeves, set in concrete slab or wall, to a minimum depth of 12 inches. Fill sleeve joint with lead, nonshrink grout, or other approved material. Set posts for support of removable fence sections into sleeves that provide a tight sliding joint and hold posts aligned and plumb without use of lead or setting material.

3.3.3 Bracing

Brace gate, corner, end, and pull posts to nearest post with a horizontal brace used as a compression member, placed at least 12 inches below top of fence, and two diagonal truss rods and truss tighteners used as tension members.

3.4 CONCRETE STRENGTH

Provide Concrete that has attained at least 75 percent of its minimum

28-day compressive strength, but in no case sooner than 7 calendar days after placement, before rails, tension wire, or fabric are installed. Fabric and wires must not be stretched or gates hung until the concrete has attained its full design strength.

Samples and test concrete must be taken to determine strength as specified.

3.5 TOP RAILS

Provide top rails that run continuously through post caps or extension arms, bending to radius for curved runs. Provide expansion couplings as recommended by the fencing manufacturer.

3.6 CENTER RAILS

Center rails must be one piece between posts set flush with posts on the fabric side, using special offset fittings where necessary.

3.7 BRACE ASSEMBLY

Contractor must provide bracing assemblies at end and gate posts and at both sides of corner and pull posts, with the horizontal brace located at midheight of the fabric.

Install brace assemblies so posts are plumb when the diagonal rod is under proper tension.

Provide two complete brace assemblies at corner and pull posts where required for stiffness and as indicated.

3.8 TENSION WIRE INSTALLATION

Install tension wire by weaving them through the fabric and tying them to each post with not less than 7-gage galvanized wire or by securing the wire to the fabric with 10-gage ties or clips spaced 24 inches on center.

3.9 FABRIC INSTALLATION

Provide Fabric in single lengths between stretch bars with bottom barbs placed approximately 1-1/2-inches above the ground line. Pull fabric taut and tied to posts, rails, and tension wire with wire ties and bands.

Install fabric on the security side of fence, unless otherwise directed.

Fabric must remain under tension after the pulling force is released.

3.10 STRETCHER BAR INSTALLATION

Thread stretcher bars through or clamped to fabric 4 inches on center and secured to posts with metal bands spaced 15 inches on center.

3.11 SUPPORTING ARMS

Install barbed wire supporting arms and barbed wire as indicated on the drawings and as recommended by the manufacturer. Anchor supporting arms with 3/8 inch diameter plain pin rivets or, at the Contractor's option, with studs driven by low-velocity explosive-actuated tools for steel, wrought iron, ductile iron, or malleable iron. Studs driven by an explosive-actuated tool shall not be used with gray iron or other material

that can be fractured. Use a minimum of two studs per support arm. Pull barbed wire taut and attach to the arms with clips or other means that will prevent easy removal.

3.12 GATE INSTALLATION

Install gates plumb, level, and secure, with full opening without interference. Install ground set items in concrete for anchorage as recommended by the fence manufacturer. Adjust hardware for smooth operation and lubricated where necessary.

3.13 TIE WIRES

Provide tie wires that are U-shaped to the pipe diameters to which attached. Twist ends of tie wires not less than two full turns and bent so as not to present a hazard.

3.14 FASTENERS

Install nuts for tension bands and hardware on the side of the fence opposite the fabric side. Peen ends of bolts to prevent removal of nuts.

3.15 ZINC-COATING REPAIR

Clean and repair galvanized surfaces damaged by welding or abrasion, and cut ends of fabric, or other cut sections with specified galvanizing repair material applied in strict conformance with the manufacturer's printed instructions.

3.16 TOLERANCES

Provide posts that are straight and plumb within a vertical tolerance of 1/4 inch after the fabric has been stretched. Provide fencing and gates that are true to line with no more than 1/2 inch deviation from the established centerline between line posts. Repair defects as directed.

3.17 SITE PREPARATION

3.17.1 Clearing and Grading

Clear fence line of trees, brush, and other obstacles to install fencing. Establish a graded, compacted fence line prior to fencing installation.

3.18 FENCE INSTALLATION

Install fence on prepared surfaces to line and grade indicated. Install fence in accordance with fence manufacturer's written installation instructions except as modified herein.

3.18.1 Post Spacing

Provide line posts spaced equidistantly apart, not exceeding 10 feet on center. Provide gate posts spaced as necessary for size of gate openings. Do not exceed 500 feet on straight runs between braced posts. Provide corner or pull posts, with bracing in both directions, for changes in direction of 15 degrees or more, or for abrupt changes in grade. Provide drawings showing location of gate, corner, end, and pull posts.

3.18.2 Top and Bottom Tension Wire

Install bottom tension wires before installing chain-link fabric, and pull wires taut. Place top and bottom tension wires within 8 inches of respective fabric line.

3.19 ACCESSORIES INSTALLATION

3.19.1 Post Caps

Design post caps to accommodate top rail. Install post caps as recommended by the manufacturer.

3.19.2 Padlocks

Provide padlocks for gate openings and provide chains that are securely attached to gate or gate posts. Provide padlocks keyed alike, and provide two keys for each padlock.

3.20 CLEANUP

Remove waste fencing materials and other debris from the work site.

-- End of Section --

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SECTION 32 92 19.04 12

TURF ESTABLISHMENT AND MAINTENANCE

PART 1 GENERAL

1.1 SCOPE

The work provided herein consists of the Contractor furnishing all plant, labor, equipment, and materials, and performing all operations necessary for establishment and maintenance of turf on areas as specified herein and as indicated on the drawings. Turf establishment of the embankment shall be performed upon completion of embankment construction and repair of any damaged slopes prior to turfing operations. Turf will be considered established when the areas to be turfed have produced the required grass species over a minimum of 75 percent of the entire area as determined by the Government. In addition, bare areas with diameters larger than 24 inches are considered unacceptable. Final payment will not be authorized until turf is established and accepted.

1.2 MEASUREMENT

1.2.1 Seeding and Mulching

Measurement for seeding and mulching will be made by the acre. Acreage will be determined from surface areas computed from the theoretical gross cross section of embankment seeded and mulched. Measurement will be to the nearest foot and units computed to the nearest one-hundredth of an acre. No separate measurement will be made for placement of material required for repairs as described in paragraphs "Soil for Repairs" and "Replanting".

1.2.2 Fertilizer

Measurement for applying initial and post fertilizer to the soil as recommended by the certified agronomist after reviewing the soil testing results shall be made at the contract unit price per pound. The fertilizer weights shall be computed based on the available weights of nitrogen, phosphorous, or potassium required by the Turf Establishment Plan. Other inert or elemental materials typically included in the fertilizer shall not be included in the weight measurement. Measurement will be computed to the nearest one-hundredth of a pound. The initial application shall contain a minimum of 60-pounds of available nitrogen, phosphorous and potassium per acre upon application. The post fertilizing shall be as recommended by the certified agronomist test results.

1.2.3 Lime or Sulfur Soil Amendment

Measurement for applying soil amendments (lime and/or sulfur) to the soil as recommended by the certified agronomist after reviewing the soil testing results shall be made at the contract unit price per ton. Measurement will be computed to the nearest one-hundredth of a ton.

1.3 PAYMENT

1.3.1 Seeding and Mulching

Payment for seeding and mulching will be made at the contract unit price per acre for "Seeding and Mulching". Price and payment shall constitute full compensation for furnishing all plant, labor, materials and equipment, including soil testing, Turf Establishment Plan, and watering to prepare the soil and apply the seed and mulch at the applicable rates as specified herein. After seeding and mulching is completed, the Contractor may request partial payment only. Material certification and invoices must be provided to authorize the initial 60% payment when seeding is completed and 100% when turf is established and finally accepted in accordance with paragraph ESTABLISHMENT.

1.3.2 Fertilizer

Payment for initial and post fertilizer as required by the Turf Establishment Plan shall be made at the contract unit price per pound for "Fertilizer." Price and payment shall constitute full compensation for furnishing all plant, labor, materials and equipment necessary to apply the fertilizer at the applicable rates as described in the Turf Establishment Plan.

1.3.3 Lime Soil Amendment (OPTIONAL ITEM)

Payment for lime application, if required, will be made at the contract unit price per ton for "Lime Soil Amendment (Optional)". Price and payment shall constitute full compensation for furnishing all plant, labor, materials and equipment to apply the lime soil amendment at the applicable rates as described and recommended in the Turf Establishment Plan.

1.3.4 Sulfur Soil Amendment (OPTIONAL ITEM)

Payment for sulfur application, if required, will be made at the contract unit price per ton for "Sulfur Soil Amendment (Optional)". Price and payment shall constitute full compensation for furnishing all plant, labor, materials and equipment to apply the sulfur soil amendment at the applicable rates as described and recommended in the Turf Establishment Plan.

1.4 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 01 33 00 SUBMITTAL PROCEDURES:

SD-07 Certificates

Seed

The Contracting Officer's Representative shall be furnished duplicate signed copies of statements certifying that each container of seed delivered is labeled in accordance with the Federal Seed Act and any Louisiana Department of Agriculture regulations and is at least equal to the requirements specified in paragraph "Soil for Repairs". This certification shall be

obtained from the supplier and shall be furnished on or with all copies of seed invoices.

Turf Establishment Plan; G

The Contractor shall submit a Turf Establishment Plan for approval. The plan shall include recommendations for fertilizer and/or soil amendment application based upon soil testing results by a certified agronomist or soil scientist for each completed section of levee to be turfed. The Contractor shall provide the name of the certified agronomy testing laboratory in addition to copies of the levee/embankment material soil analyses data sheets. Soil analyses shall include soil pH, phosphorus, potassium, calcium, magnesium, sodium, sulfur, copper, zinc, chloride, total dissolved salts, conductivity, and sodium absorption ratio. In addition to the soil amendment and fertilization plan, the Turf Establishment Plan shall describe procedures and specific equipment used for ground surface preparation, seeding, and mulching.

1.5 QUALITY CONTROL

1.5.1 General

The Contractor shall establish and maintain quality control for the work specified in this section to assure compliance with contract requirements and maintain records of this quality control for all construction operations including, but not be limited to, the following:

(1) Soil and Water Analyses - Soil and water analysis reports from a certified agronomic laboratory. Water used for irrigation subsequent to establishment shall be tested a minimum of once every 30 days. Soil samples will be taken in according to paragraph Soil Analysis and the test results used to determine weights of fertilizer and soil amendments required.

(2) Preparation of Ground Surface - Location and quality of finished dressing, including necessary clearing, filling, or dressing out of washes, smoothness and uniformity of surfaces, and time of year.

(3) Fertilizing - Quality of fertilizer materials used. Areas fertilized, quantity applied, and method of application. Certificate of analysis and certificate of delivery shall be furnished to the Contracting Officer to verify quality and quantity as specified in paragraph Turf Establishment Plan. The rate of application shall be checked daily to insure conformance to soil testing laboratory recommendations.

(4) Seeding - Seed species and cultivar, seed label, area covered, quantity of seed applied, and method of seed distribution. All bags of seed furnished shall have an analysis tag showing all information required by the Louisiana Seed Law. Seed furnished shall be from the previous season's crop and the date of analysis shown on each tag shall be within 5 months of time of delivery. Rate of application shall be checked daily to insure that the rate confirms to the requirements of paragraph General.

(5) Mulching - Quality and type of mulch material applied, area covered by the mulch, quantity applied, and method of mulch

application. Certificate of delivery showing weight of material delivered for either vegetative or fiber mulch shall be furnished to verify rate of application according to paragraph "Applying Mulch".

(6) Maintenance and Repair - Location and type of maintenance problems and remedial treatment performed according to paragraph "Soil for Repairs" and "Damage to Established Seeding Area".

(7) Water/Irrigation - Water analysis report, area where water was obtained, area where water was applied, purpose of water application (irrigation or used during establishment), quantity applied, and method of application.

1.5.2 Reporting

The Contractor shall furnish the original and two copies of the inspection and test records, as well as "corrective action taken" records, to the Contracting Officer's Representative daily. Format of the report shall be as prescribed in SECTION 01 45 04.00 10, "CONTRACTOR QUALITY CONTROL".

1.6 AREAS TO BE TREATED

Fertilizing, soil amending, seeding, and mulching shall be performed on all disturbed areas within the construction limits and on all newly constructed embankments.

1.7 COMMENCEMENT, PROSECUTION, AND COMPLETION

1.7.1 General

Preparation of the ground surface, fertilizing, and soil amending shall be in accordance with paragraphs "Preparation of Ground Surface" and "Application of Fertilizer and Soil Amendments. Seeding operations shall be accomplished during the applicable growing season as specified in paragraph "Seeding".

1.7.2 Sequence of Work

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

(1) Soil Analyses

(2) Preparation of Ground Surface

(3) Fertilization and Soil Amendments

(4) Seeding

(5) Mulching

(6) Water Application

(7) Mowing

Fertilizing, seeding and mulching operations shall commence upon completion of embankment construction at a length corresponding to the completed length of embankment construction in SECTION 31 24 00.00 12. At no time shall such fertilizing, soil amending, seeding, and mulching operations be

more than 14 days behind completed portions of embankment unless approved by the Contracting Officer.

1.8 TURF ESTABLISHMENT PLAN

At least 14 calendar days prior to initiating grass establishment, the Contractor shall furnish a Turf Establishment Plan for review and approval. The plan shall include recommendations for fertilizer and/or soil amendment application based upon soil testing results by a certified agronomist for each completed section of levee to be turfed. Recommendations based on soil testing results can be from a testing laboratory, state agricultural extension services, or private consultant. However, the Turf Establishment Plan must be prepared by the Contractor and approved by a certified agronomist or certified soil scientist to clearly indicate the application rates for soil amendments and fertilizer. In addition to the soil amendment and fertilization plan, the Turf Establishment Plan shall describe procedures and specific equipment used for ground surface preparation, seeding, and mulching. Unless the approved Turf Establishment Plan contains a variation, the minimum requirements for ground surface preparation, seeding, and mulching contained in this specification will be controlling.

1.8.1 Certified Agronomy Testing Laboratory

The Contractor shall provide the name of the certified agronomy testing laboratory in addition to copies of the levee/embankment material soil analyses as part of the turf establishment plan. Soil analyses shall include soil pH, phosphorus, potassium, calcium, magnesium, sodium, sulfur, copper, zinc, chloride, total dissolved salts, conductivity, and sodium absorption ratio.

1.8.2 Certified Water Analysis

The Contractor shall also provide the name of the certified water analysis laboratory as well as copies of the findings for all proposed water sources, other than municipal water sources, earmarked for grass establishment and irrigation. Water analyses shall include pH, alkalinity, calcium, chloride, iron, magnesium, manganese, potassium, sodium, sulfur, total dissolved salts, conductivity, and sodium absorption ratio.

PART 2 PRODUCTS

2.1 MATERIALS

2.1.1 Fertilizer and Soil Amendments

Fertilizers and soil amendments in accordance with the approved Turf Establishment Plan shall be of commercial grade, uniform in composition, free flowing and suitable for the Contractor's application method. Materials shall be delivered in bulk or labeled containers and shall conform to current Louisiana Department of Agriculture requirements for commercial fertilizers and soil amendments. Federal and state Government conforming labels that indicate producer's name, type, analysis, weight, and warranty of producer shall accompany each delivery of fertilizer. The Contractor shall provide duplicate signed copies of invoices from suppliers of fertilizer and/or soil amendments showing quantity, grade, and fertilizer analysis indicating percentages of nitrogen (soluble and insoluble), phosphorus, and potassium.

2.1.2 Soil for Repairs

In areas not suitable for turf establishment due to undulations or rills in the soil surface, these areas shall be repaired using compacted fill in accordance with Section 31 23 00.00 12 "Excavation" and Section 31 24 00.00 12 "Embankment".

2.1.3 Seed

For turf establishment, the Contractor shall furnish and apply certified (blue-tag) seed in accordance with regulations from the U.S. Department of Agriculture (under the Federal Seed Act) and the Louisiana Department of Agriculture. Seed must be in sealed or unopened containers prior to initiation of application. Seed that is wet, moldy or otherwise non-viable due to damage in transit or storage will not be accepted. Seed that is older than one year past label germination tests will not be accepted.

2.1.4 Mulch

Mulch options include threshed straw from a cereal grain such as oats, wheat, barley, rye, or rice; bagasse; grass hay; or wood mulch fiber that shall be furnished and applied by the Contractor. All mulch products shall include a minimum 3% tackifier or be anchored by a method approved by the Contracting Officer. Materials that contain noxious grass or weed seeds that might be detrimental to the seed establishment or turf growth or to adjacent areas will not be acceptable. Mulch shall not contain any paper fiber product.

2.1.5 Water Source

Water, applied during establishment and irrigation of grass on the embankment from a water source other than municipal water supply shall be analyzed by a certified water analysis laboratory. The water source shall be tested every 30 days or until operations cease use of the water source for irrigation purposes. In addition to the agronomic tests to determine irrigation water suitability, the contractor should not apply water as irrigation that may contain any substance toxic to plants or that limits plant growth (e.g. oil, acid, alkali, salt, etc.).

PART 3 EXECUTION

3.1 SOIL AND WATER ANALYSIS

3.1.1 Soil Analysis

Soil samples shall be collected for every 5 acres of disturbed area to be turfed. Each soil sample shall be a composite sample from no less than six random areas within the 5-acre area to a depth of four inches on the levee/embankment/berm surface. Collected soil shall be mixed within a clean, non-metallic container. All organic matter from existing vegetation shall be removed from the soil sample prior to submission to the testing laboratory.

3.1.2 Water Source Analysis (Not Municipal Water Source)

Water samples from borrow canals or similar sites should be collected in duplicate in the volume of one liter (per sample) in a clean plastic container for analysis by a certified agronomic water analysis laboratory. Debris such as sediment and algae shall be limited from within the sample.

3.2 PREPARATION OF GROUND SURFACE

3.2.1 General

Equipment, in good condition, shall be provided for ground preparation and for handling and placing all materials. The Contracting Officer's Representative shall approve equipment before work is initiated as part of the Turf Establishment Plan.

3.2.2 Vegetative and Debris Removal

Prior to soil preparation, existing vegetation shall be removed. Vegetation removal may be accomplished through mowing (scalping) or herbicide application. Any debris or material (e.g. clippings, shell, rocks, gravel) that may hinder seed germination, limit plant growth, or interfere with mowing operations shall be removed as specified in Section 31 11 00.00 12, paragraph DISPOSAL OF DEBRIS. Prior to and during soil preparation, the Contractor shall also remove any shells, rock, and other debris that are in the embankment and vegetative material from clearing that was placed back onto the levee section after completion of the embankment. The Contractor shall utilize a landscape rock rake or similar equipment supplemented with hand labor to remove this debris prior to fertilizing, seeding and mulching.

3.2.3 Grading

Previously established levee/embankment grades and slopes shall be maintained in a true and even condition on the areas to be established with turf. Repairs to previously graded areas with undulations or irregularities in the surface shall be accomplished with material as described in paragraph SOIL FOR REPAIRS. The material shall be placed and compacted in accordance with Section 31 24 00.00 12, paragraph EMBANKMENT CONSTRUCTION. Where grades have not been established, the areas shall be graded as shown, or as directed by the Contracting Officer's Representative and all surfaces shall be left in a true and even condition. The Contracting Officer's Representative will conduct a Pre-Turfing inspection prior to commencement of turfing operations.

3.2.4 Soil Preparation

Soil shall be tilled to a depth of 2 inches by plowing, disking, harrowing, or other approved methods in the Turf Establishment Plan in order to provide an acceptable seed bed. The soil preparation shall be performed only during periods acceptable for turf establishment, in the opinion of the Contracting Officer's Representative. Environmental conditions that may constitute unacceptable periods for soil preparation include, but are not limited to, drought, high winds, excessive moisture, etc. The work shall cease until conditions are more favorable for turf establishment. Any additional soil repair shall be completed prior to turf establishment.

3.3 APPLICATION OF FERTILZER AND SOIL AMENDMENTS

Adjustment of soil nutrient levels will be in accordance with the approved Turf Establishment Plan as specified in paragraph Turf Establishment Plan. Unless otherwise specified in the approved plan, initial fertilizers and soil amendments applications shall be incorporated into the top two inches of soil prior to seeding. The Contractor shall layout the embankment sections in one acre plots, with levee crown and side slopes laid out

separately from berms and other areas to be treated. The one-acre plots shall be clearly marked with stakes and flagging to assure the correct amount of soil amendments, seed and mulch is applied per acre.

3.3.1 Fertilizer

In accordance with the approved Turf Establishment Plan, fertilizer shall be incorporated to a depth of 2 inches prior to seeding.

3.3.2 Soil pH

Soil pH shall be between 5.4 and 8.2. If the soil pH is outside of this range, one of the following amendments shall be added to adjust the soil pH.

3.3.2.1 Increasing Soil pH

A pulverized or palletized agricultural lime source shall be applied prior to planting and incorporated into the top 2 inches of soil. The rate of lime application shall be as specified in the approved Turf Establishment Plan. Dolomitic lime may be substituted for lime if magnesium levels are insufficient in accordance with the soil test results. Materials shall be hydrated lime conforming to Section 1018.03 of the 2006 edition of LDOTD Standard Specification for Roads and Bridges. The quantity of lime to be mixed with the embankment shall be determined by the soil testing results, and shall be sufficient in quantity to permit compaction to the specified density. The lime shall be uniformly spread and uniformly mixed with the soil..

3.3.2.2 Reduce Soil pH

Agricultural grade elemental sulfur shall be applied, as specified in the approved Turf Establishment Plan, prior to planting. Elemental sulfur shall be incorporated into the top two inches of soil.

3.4 SEEDING

3.4.1 General

The applicable seed shall be sown at the rate and time as indicated in the table below, unless otherwise specified in the approved Turf Establishment Plan. A method of sowing shall be employed; using approved mechanical power-drawn seeders, mechanical hand- seeders, broadcast-seeders, or other approved methods. When delays in operations extend the work beyond the most favorable planting season for the species designated, or when conditions are such by reason of drought, high winds, excessive moisture, or other factors that satisfactory results are not likely to be obtained, work shall be stopped as directed by the Contracting Officer's Representative and resumed only when conditions are favorable for turf establishment or when approved alternative or corrective measures and procedures have been completed. If inspection during or after seeding operations indicates that areas have been left unplanted or other areas have not been adequately addressed, additional seed shall be applied.

<u>March 1 to September 1</u>
hulled common Bermuda grass - 75 lbs (min) of PLS/acre or
bermuda grass/seashore paspalum mix- 75 lbs (min) of PLS / acre

<u>September 1 to March 1</u>
Step 1 - annual, intermediate or perennial ryegrass-50 lbs (min)

of PLS / acre to provide coverage during months when environmental conditions are not suitable for common bermuda grass establishment.

Step 2 - between March 1 and September 1 - hulled common bermuda grass - 75 lbs (min) of PLS/acre or bermuda grass/seashore paspalum mix- 75 lbs (min) of PLS / acre

Hulled Bermuda grass may be planted in the month of February if soil temperatures are in excess of 65 F for a minimum of 7 consecutive days.

PLS (Pure Live Seed) = (label germination rate x label purity) x 100

Example of how to calculate PLS
PLS = (0.95 germination rate x 0.85 purity) x 100
PLS = 81 %
Therefore 1 lb PLS requires 1/0.81 = 1.23 lbs of seed

3.4.2 Broadcast Seeding

Seed shall be broadcast with approved sowing equipment and distributed uniformly over designated areas at the appropriate seeding rates. After broadcast seeding, seed shall be covered to an average depth of 1/4-inch using a brush, harrow, spike-tooth harrow, chain harrow, cultipacker, or other approved device. In addition, after soil amending and seeding, the soil shall be compacted using a tractor drawn pull behind smooth drum roller or other approved equipment necessary to compact the soil to prevent erosion prior to mulching. Seed shall not be broadcast during windy or inclement weather.

3.4.3 Damage to Established Seeding Area

The Contractor shall be fully responsible for any damage to the establishment areas caused by his/her operations. Areas that become damaged as a result of poor workmanship or failure to meet the requirements of the specifications will be ordered repaired and reseeded to specification requirements, without any additional cost to the Government.

3.5 APPLYING AND ANCHORING MULCH

Application of mulch shall follow these guidelines unless otherwise specified in the approved Turf Establishment Plan. The mulch shall be vegetative non-asphalt mulch consisting of grain straw (oats, wheat, or rice) wood fiber or grass hay. Dry broadcast type mulch, as specified in paragraph " Mulch", shall be applied uniformly on the soil surface at the minimum rate of 2 tons (approximately 80 bales) per acre. Hydrologicly-placed mulch (applied at the rate specified in the turf establishment plan but no less than 3,500 pounds per acre on levee slopes and crown and 2,000 pounds per acre on berms) shall be done immediately after seeding. Hydromulching will include an improved tackifier applied at the rate recommended by the manufacturer. Dry broadcast type mulch shall be tacked by spraying with emulsified tackifier at the rate of 150 gallons per ton of mulch, crimped or as recommended in the Turf Establishment Plan. The mulch and tackifier shall be applied by means of approved equipment.

3.6 WATER APPLICATION DURING TURF ESTABLISHMENT

Unless the Contracting Officer's Representative concurs that acceptable

levels from precipitation have occurred to support grass establishment, watering operations will be conducted one to two days after seeding. Water shall be applied at least 2 times per week for a period of 28 days unless otherwise directed by the Contracting Officer's Representative based on natural rainfall. The application of water shall sufficiently moisten at least the top 2 inches of soil with each irrigation event. The application of water in excess, so that surface runoff occurs, is prohibited. The Contractor shall repair all damaged areas, including tire ruts and repairs to seeded and mulched areas, caused by watering at no additional cost to the Government.

3.7 MOWING

3.7.1 New Turf Establishment Areas

Turf areas established under this contract shall be mowed with approved mowing equipment to a height of 3 to 4-inches whenever the height of the vegetation is in excess of 8 inches. Grass clippings created from mowing that will inhibit turf establishment shall be removed from the site. The Contractor shall perform periodic and final grass mowing within the limits of work until final inspection and acceptance.

3.7.2 Existing Turf Maintenance

For the duration of the contract, the Contractor shall maintain established turf within the limits of the work as shown on the drawings. Same requirements as paragraph New Turf Establishment Areas apply.

3.8 INSPECTIONS AND REPORTS

After initial planting, the Contractor shall inspect newly turfed areas at least once every two weeks. For each inspection conducted, the Contractor shall prepare a report summarizing the scope of the inspection, names of personnel making the inspection, inspection date, height of vegetation, observations and conclusions, maintenance performed, and corrective actions, if required. The report shall be furnished to the Contracting Officer's Representative within 24 hours of the inspection as a part of the Contractor's daily QC Report.

3.9 REPLANTING

The Contractor shall restore/repair any eroded areas or bare spots along the alignment in accordance with the requirements of this specification, all at no additional cost to the Government.

3.10 POST-PLANTING FERTILIZER APPLICATION

For those areas that do not require replanting, approximately one month after the initial planting, fertilizer shall be applied at the minimum rate of 45 lbs per acre using a slow-release nitrogen fertilizer formula, or at a rate as recommended in the Turf Establishment Plan. The fertilizer shall be applied with irrigation or rainfall occurring within 24 hours.

3.11 ESTABLISHMENT

Turf will be considered established and completed when the areas to be turfed have produced the required grass species, either Bermuda or Seashore Paspalum, over a minimum of 85 percent of the entire area as determined by the Contracting Officer's Representative by random sampling. Eighty-five

percent coverage shall be confirmed by the use a 1 meter square constructed from PVC with 100 blocks of 100cm2 (10 cm grid). Measurements shall be made on both sides of the levee every 100 to 250 feet. If 15 blocks of the 1-meter square are not filled with the intended vegetative species; that section of the levee shall be deemed unacceptable.

3.12 INSPECTION AND ACCEPTANCE

Acceptance inspections of the entire turfed area shall be performed by the Contracting Officer's Representative by random sampling and supplemented by visual inspections. Bare areas with diameters larger than 24 inches are to be considered unacceptable. This measurement supersedes the first criteria for vegetative acceptance. These areas shall be noted for repairs. If inspection determines that turf establishment is not complete, the Contractor shall meet with the Contracting Officer's Representative at the job site to identify bare spots, eroded areas and rutting damage and to discuss the Contractor's plan of operation for completing new turf establishment. Prior to acceptance of turfed areas by the Contracting Officer's Representative, the Contractor shall restore any damaged areas resulting from the Contractor's operations or by natural forces at no additional cost to the Government. Partial reaches will not be accepted unless determined by the Contracting Officer's Representative to be in the best interest of the Government.

-- End of Section --

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SECTION 35 43 38.00 12

CONCRETE SCOUR PROTECTION

PART 1 GENERAL

1.1 SCOPE

The work covered by this Section consists of furnishing all plant, labor, materials, and performing all operations in connection with furnishing and placing cast-in-place concrete for scour protection as shown on drawings and specified herein.

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.

ACI INTERNATIONAL (ACI)

ACI 308R	(2001) Guide to Curing Concrete
ACI 318/318R	(2008; Errata 2008) Building Code Requirements for Structural Concrete and Commentary
ACI 347	(2004) Guide to Formwork for Concrete

ASTM INTERNATIONAL (ASTM)

ASTM A 185/A 185M	(2007) Standard Specification for Steel Welded Wire Reinforcement, Plain, for Concrete
ASTM A 615/A 615M	(2008a) Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement
ASTM C 31/C 31M	(2009) Standard Practice for Making and Curing Concrete Test Specimens in the Field
ASTM C 33	(2007) Standard Specification for Concrete Aggregates
ASTM C 39/C 39M	(2008) Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens
ASTM C 94/C 94M	(2009) Standard Specification for Ready-Mixed Concrete
ASTM C 143/C 143M	(2009) Standard Test Method for Slump of Hydraulic-Cement Concrete
ASTM C 150	(2007) Standard Specification for Portland

	Cement
ASTM C 1567	(2008) Standard Test Method for Potential Alkali-Silica Reactivity of Combinations of Cementitious Materials and Aggregate (Accelerated Mortar-Bar Method)
ASTM C 172	(2008) Standard Practice for Sampling Freshly Mixed Concrete
ASTM C 231	(2009a) Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method
ASTM C 260	(2006) Standard Specification for Air-Entraining Admixtures for Concrete
ASTM C 309	(2007) Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete
ASTM C 494/C 494M	(2008a) Standard Specification for Chemical Admixtures for Concrete
ASTM C 595	(2008a) Standard Specification for Blended Hydraulic Cements
ASTM C 618	(2008a) Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete
ASTM C 685/C 685M	(2001) Concrete Made by Volumetric Batching and Continuous Mixing
ASTM C 989	(2009a) Standard Specification for Ground Granulated Blast-Furnace Slag for Use in Concrete and Mortars
ASTM D 1752	(2004a) Standard Specification for Preformed Sponge Rubber Cork and Recycled PVC Expansion
ASTM D 75	(2003) Standard Practice for Sampling Aggregates
ASTM D 3406	(2000) Joint Sealant, Hot Poured, Elastomeric Type, for Portland Cement Concrete Pavements

U.S. ARMY CORPS OF ENGINEERS (USACE)

COE CRD-C 100	(1975) Method of Sampling Concrete Aggregate and Aggregate Sources, and Selection of Material for Testing
COE CRD-C 400	(1963) Requirements for Water for Use in Mixing or Curing Concrete

LOUISIANA STRANDARD SPECIFICATIONS FOR ROADS AND BRIDGES (2006 Edition), LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT (LADOTD)

LSSRB 1003.02 Aggregates for Portland Cement Concrete and Mortar

U.S. BUREAU OF RECLAMATION (BOR)

BRSS-M-41 (Mar 1998) Elastomeric Canal Joint Sealant

1.3 MEASUREMENT AND PAYMENT

1.3.1 Measurement

Measurement for concrete scour protection will be made by the square yard of concrete pavement satisfactorily placed. Measurement will be made to the nearest 1/10 foot and units computed to the nearest square yard. To allow for cutoff wall, 10 additional square yards will be allowed for each 60 linear feet of satisfactorily placed cutoff wall.

1.3.2 Payment

Payment for concrete scour protection will be the contract unit price per square yard for "Concrete Scour Protection." Price and payment shall include the cost of all labor, materials, and the use of all equipment and tools required to construct the concrete scour protection including formwork, joints, sealants, reinforcement, cutoff trench, and other components incidental thereto.

1.4 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 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Concrete Mixture Proportions; G, RO

At least 10 Federal working days prior to placement of concrete, the Contractor shall submit the mixture proportions that will produce concrete of the quality required. Mixture proportions shall include the dry weights of each cementitious material; the nominal maximum size of the coarse aggregate; the specific gravities, absorptions, and saturated surface-dry weights of fine and coarse aggregates; the quantities, types, and names of admixtures; and quantity of water per cubic yard of concrete. All materials included in the mixture proportions shall be of the same type and from the same source as will be used on the project. Documentation complying with paragraph 5.3.3 and, if applicable, paragraph 5.3.1 of ACI 318/318R shall be submitted to verify that the concrete mixture proportions selected will produce concrete of the quality specified.

Conveying and Placing Concrete; G, RO

The methods and equipment for transporting, handling, depositing, and consolidating the concrete shall be submitted prior to the first concrete placement.

SD-03 Product Data

Preformed Expansion Joint Filler Strips; G, RO

Manufacturer's literature which demonstrates compliance with these specifications shall be submitted.

Field-Molded Joint Sealant; G, RO

Preliminary acceptance of the sealant will be based on a certificate of compliance or manufacturer's literature which states compliance together with manufacturer's literature detailing the recommended application method and equipment. Final acceptance of the sealant will be based on a successful field demonstration.

Curing Materials; G, RO

Manufacturer's literature which demonstrates compliance with these specifications shall be submitted.

Batching and Mixing Equipment; G, RO

Batching and mixing equipment will be accepted on the basis of manufacturer's data which demonstrates compliance with the applicable specifications. The name and location of the batch plant shall be submitted.

SD-07 Certificates

Cementitious Materials; G, RO

Certificates of compliance attesting that the concrete materials meet the requirements of the specifications shall be submitted in accordance with Section 01100 GENERAL PROVISIONS, "CERTIFICATES OF COMPLIANCE". Cementitious material will be accepted on the basis of a manufacturer's certificate of compliance, accompanied by current mill test reports stating that the material meets the requirements of the specification under which it is furnished. If a blended product meeting ASTM C 595 is to be used, the manufacturer shall also certify in writing that the amount of pozzolan or slag in the finished cement will not vary more than plus or minus 5.0 mass percent of the finished cement from lot to lot or within a lot.

Aggregates; G, RO

Aggregates will be accepted on the basis of certificates of compliance and test reports that show the material(s) meets the quality and grading requirements of the specifications under which it is furnished. The gradation test for the fine aggregate shall include the No. 8 and No. 30 sieve sizes. The name and location of the pit shall also be furnished.

Air-Entraining Admixture; G, RO

Air-entraining admixture shall be certified for compliance with all specification requirements.

Water Reducing or Retarding Admixture; G, RO

Water reducing or retarding admixture shall be certified for compliance with all specification requirements.

Other Chemical Admixtures; G, RO

Other chemical admixtures shall be certified for compliance with all specification requirements.

Reinforcing Steel and Dowels; G, RO

Reinforcing steel and steel dowels shall be certified for compliance with all specification requirements. Shop drawings for placement of reinforcing steel shall be submitted for approval.

1.5 QUALITY CONTROL

1.5.1 General

The Contractor shall establish and maintain quality control for concrete operations to assure compliance with contract requirements and maintain records of his/her quality control for all construction operations including but not limited to the following:

(1) Batching and Mixing Equipment. Verify type, size, and suitability for construction of the prescribed work.

(2) Formwork. Verify dimensions and finish elevations for compliance with drawings.

(3) Embedded Items. Verify all embedded items are in place before concrete placement.

(5) Concrete. Verify concrete mix is correct for intended use.

(6) Protection and Curing. Verify concrete is protected and cured properly. Record cold and hot weather temperatures.

(7) Control Testing. The individuals who sample and test concrete shall have demonstrated a knowledge and ability to perform the necessary test procedures equivalent to the ACI minimum guidelines for certification of Concrete Field Testing Technicians, Grade I. Tests shall be conducted at least once during each shift that concrete is produced or as directed by the Government. If results are out of specification, the frequency of testing shall be increased until deficiencies are corrected.

(a) Aggregate Tests.

(b) Air Content Tests.

(c) Slump Tests.

1.5.2 Reporting

All results of tests, inspections or corrective actions shall be reported informally as they are completed and in writing (original and 2 copies) to the Government daily. Format of the daily reports shall be as specified in Section 01 45 04.00 12 CONTRACTOR QUALITY CONTROL. The Contracting Officer has the right to examine all test and inspection records.

1.6 DESIGN AND PERFORMANCE REQUIREMENTS

The Government will maintain the option to sample and test joint sealer, joint filler material, aggregates and concrete to determine compliance with the specifications. The Contractor shall provide facilities and labor as may be necessary to assist the Government in procurement of representative test samples. Samples of aggregates will be obtained at the point of batching in accordance with ASTM D 75. Concrete will be sampled in accordance with ASTM C 172. Slump and air content will be determined in accordance with ASTM C 143/C 143M and ASTM C 231, respectively, when cylinders are molded. Compression test specimens will be made, cured, and transported in accordance with ASTM C 31/C 31M. Compression test specimens will be tested in accordance with ASTM C 39/C 39M. Samples for strength tests will be taken not less than once each shift in which concrete is produced. A minimum of 3 specimens will be made from each sample; 2 will be tested at 28 days (90 days if pozzolan or GGBF slag is used) for acceptance, and 1 will be tested at 7 days for information.

1.6.1 Strength Acceptance

Acceptance test results will be the average strengths of 2 specimens tested at the specified design age. The strength of the concrete will be considered satisfactory so long as the average of 3 consecutive acceptance test results equal or exceed the specified compressive strength, f 'c, and no individual acceptance test result falls below f 'c by more than 500 pounds per square inch.

1.6.2 Construction Tolerances

A Class "C" finish shall apply to all surfaces except those specified to receive a Class "D" finish. A Class "D" finish shall apply to all surfaces which will be permanently concealed after construction. For formed surfaces, the permitted abrupt or gradual irregularities as defined in ACI 347 shall be 1/2 inch for Class "C" finishes and 1 inch for "D" finishes. Gradual variation is determined by placing a freestanding (unleveled), 5-foot straightedge anywhere on the surface and allowing it to rest upon two high spots and measuring the gap at any point between the straightedge and the surface.

1.6.3 Concrete Mixture Proportions

Concrete mixture proportions shall be the responsibility of the Contractor and shall be developed using the procedures found in paragraph 5.3.2 of ACI 318/318R. Specified compressive strength, f 'c, shall be 3,000 pounds per square inch at 28 days (90 days if pozzolan or GGBF slag is used). The nominal maximum size coarse aggregate shall be 1 inch. The air content shall range from 4.5 percent to 7.5 percent. The slump shall be suitable for placing concrete on sloping surfaces as shown on the drawings, but shall not exceed 5 inches. The maximum water to cementitious materials ratio shall be 0.55.

1.6.4 Formwork

The design and construction of the formwork shall be the responsibility of the Contractor.

PART 2 PRODUCTS

2.1 CEMENTITIOUS MATERIALS

Cementitious materials shall be portland cement, portland cement in combination with pozzolan or GGBF slag, or blended hydraulic cement and shall conform to appropriate specifications listed below.

2.1.1 Portland Cement

Portland cement shall meet the requirements of ASTM C 150, low alkali, Type I or II.

2.1.2 Blended Hydraulic Cement

Blended hydraulic cement shall conform to ASTM C 595, Type IP (20 to 40) or IS. Blended hydraulic cement shall meet the mortar expansion limits found in Table 2 of ASTM C 595. Admixture additions shall not be included in the blended cement.

2.1.3 Pozzolan, Other than Silica Fume

Pozzolan shall conform to ASTM C 618, Class C or F, with the Effectiveness in Controlling Alkali-Silica Reaction requirements of Table 3. Test results showing that the proposed combination of cementitious materials and aggregates will expand less than 0.10 percent in 16 days when tested in accordance with ASTM C 1567 may be substituted for the Effectiveness in Controlling Alkali-Silica Reaction test.

2.1.4 Ground Granulated Blast-Furnace (GGBF) Slag

GGBF slag shall conform to ASTM C 989, Grade 100 or 120.

2.2 AGGREGATES

The aggregate sources listed in Section 01100 GENERAL PROVISIONS, paragraph AGGREGATE SOURCES have been tested and at the time testing was performed, these sources were capable of producing materials of a quality acceptable for this project provided suitable processing was performed. If the Contractor proposes to furnish aggregates from a source not listed in "AGGREGATE SOURCES," samples consisting of not less than 500 pounds of each size coarse aggregate and 300 pounds of fine aggregate taken under the supervision of the Contracting Officer in accordance with COE CRD-C 100 shall be delivered to the U.S. Army Engineer Research and Development Center (Waterways Experiment Station), 3909 Halls Ferry Road, Vicksburg, MS, within 15 days after notice to proceed. Sampling and shipment of samples shall be at the Contractor's expense. From 90 to 120 days will be required to complete evaluation of the aggregates. Testing by and at the expense of the Government will be in accordance with the applicable CRD or ASTM test methods. Tests to which aggregate may be subjected are specific gravity, absorption, freezing and thawing in concrete, alkali aggregate reaction, organic impurities and any other test necessary to demonstrate that the aggregate is of a quality which is at least equivalent to those produced by the sources listed in "AGGREGATE SOURCES." Quality of all

aggregates shall conform to the requirements of ASTM C 33. The grading of the aggregates as delivered to the mixer shall conform to LSSRB 1003.02 or ASTM C 33. The nominal maximum size shall be as listed in paragraph CONCRETE MIXTURE PROPORTIONS.

2.3 CHEMICAL ADMIXTURES

Chemical admixtures that have been in storage at the project site for longer than 6 months or that have been subjected to freezing shall be retested at the expense of the Contractor at the request of the Contracting Officer and shall be rejected if test results are not satisfactory.

2.3.1 Air-Entraining Admixture

The air-entraining admixture shall conform to ASTM C 260 and shall consistently cause the concrete to have an air content in the specified range under field conditions.

2.3.2 Water-Reducing or Retarding Admixture

Water-Reducing or Retarding Admixtures shall meet ASTM C 494/C 494M, Type A, B, or D, except that the 6-month and 1-year compressive strength tests are waived.

2.4 WATER

Water for mixing and curing shall be fresh, clean, potable, and free of injurious amounts of oil, acid, salt, sugar, or alkali, except that nonpotable water may be used if it meets the requirements of COE CRD-C 400.

2.5 REINFORCING STEEL

Reinforcing steel bar shall conform to the requirements of ASTM A 615/A 615M, Grade 60. Welded steel wire fabric shall conform to the requirements of ASTM A 185/A 185M. Details of reinforcement not shown shall be in accordance with ACI 318/318R, Chapters 7 and 12.

2.6 EXPANSION JOINT FILLER STRIPS, PREFORMED

Expansion joint filler strips shall be preformed sponge rubber conforming to ASTM D 1752, Type 1. Wood, cork, or other cellulose-based material shall not be used.

2.7 JOINT SEALANT

Field-molded joint sealant shall be capable of being placed on the slopes shown at manufacturer recommended placing temperatures and in accordance with paragraph JOINT SEALING. Sealant shall comply with ASTM D 3406 or BRSS-M-41: Class A, C, R or S.

2.8 FORM COATINGS

Form coating shall be commercial formulation that will not bond with, stain, cause deterioration, or any other damage to concrete surfaces. The coating shall not impede the wetting of surfaces to be cured with water or curing compounds.

2.9 CURING MATERIALS

Membrane-forming curing compound shall conform to ASTM C 309, Type 2.

PART 3 EXECUTION

3.1 CUTOFF WALLS

Cutoff walls shall be constructed along the top of the pavement, and down the slope of the levee from the top to the bottom of the pavement, in accordance with the details shown on the drawings. The cutoff wall trench shall be kept thoroughly drained.

3.2 FORMING

Forms shall be true to line and grade, mortar tight and sufficiently staked to prevent deformation under load in excess of 1/4 inch in 10 feet. All forms shall be so constructed that they can be removed without damaging the concrete. Forms shall be coated with a form release agent, which shall be applied shortly before concrete is placed.

3.3 EXPANSION AND CONTRACTION JOINTS

Expansion and contraction joints shall be made in accordance with the details shown or as directed by the COR. The Contractor shall provide a 1/2 inch wide expansion joint in paving slabs where indicated on the drawings. Above the expansion joint filler, to the top surface of the pavement, the joint shall be formed with a 1/2 inch thick block of wood. This block shall remain in place for 24 hours, or longer as determined by the Contracting Officer if block removal operations cause breakage of the pavement. The block shall be removed prior to placing the sealant. Contraction joints shall be sawcut 1/4 inch to 1/2 inch wide and have a depth of 1.5 to 2 inches. Saw joints at a time dependent on characteristics of concrete and rate at which its temperature changes. It shall be after concrete has hardened to extent that objectionable tearing of edges will not occur and before time that random cracking would be likely to occur if joint were not sawn. This may be as soon as 4 hours after placement in hot weather.

3.4 PREPARATION FOR PLACING

Concrete placement shall not begin until the entire preparation including the following items has been accepted by the Government. The entire cross section shall be brought to the lines and grades shown, unless approved by the Contracting Officer. Snow, ice, standing or flowing water, loose particles, debris, and foreign matter shall have been removed. Earth foundations shall be compacted and dressed as specified in Section 31 24 00.00 12 EMBANKMENT, paragraph EMBANKMENT AND BERM CONSTRUCTION. Reinforcement shall be secured in place; joints, anchors, and other embedded items shall have been positioned. Internal ties shall be arranged so that when the forms are removed the metal part of the tie will be not less than 2 inches from concrete surfaces permanently exposed to view. Embedded items shall be free of oil and other foreign matter. All equipment needed to place, consolidate, protect, and cure the concrete shall be at the placement site and in good operating condition. The ground shall be moistened (being careful not to pond water) immediately prior to concrete placement to prevent the soil from prematurely drying out the fresh concrete.

3.5 PRODUCTION OF CONCRETE

Ready-Mixed concrete shall conform to ASTM C 94/C 94M and concrete made by volumetric batching and continuous mixing shall conform to ASTM C 685/C 685M, except as otherwise specified. The equipment used by the Contractor to produce and place concrete shall be capable of doing so at a rate that will prevent the occurrence of cold joints. The Contractor shall have facilities to measure and record moisture contents of the aggregates and adjust mix proportions to compensate for varying moisture contents. A batch ticket, as specified in ASTM C 94/C 94M (including information in paragraph CEMENTITIOUS MATERIALS), shall be furnished to the Contracting Officer for every batch of concrete when delivered to the project. The Contracting Officer shall have free access to the batching and mixing plant at all times.

3.6 CONVEYING

Concrete shall be conveyed from mixer to forms as rapidly as practicable, by methods that will prevent segregation or loss of ingredients. Concrete mixed in stationary mixers and transferred by non agitating equipment shall be placed within 30 minutes after it has been mixed unless otherwise authorized. When a truck mixer or agitator is used for transporting concrete, the concrete shall be delivered to the site of the work and discharge shall be completed within 1 1/2 hours after introduction of the cement to the aggregate or water.

3.7 PLACING CONCRETE

3.7.1 General

Concrete placement shall not be permitted when in the opinion of the Contracting Officer, weather conditions prevent proper placement, finishing and curing. Placement of concrete shall commence with the bottom slab being placed first, progressing up the levee slope to the top slab unless another order of work is approved by the Contracting Officer. The placement shall be carried on at such a rate that the formation of cold joints will be prevented. Concrete shall be worked into the corners and angles of the forms without permitting the materials to segregate. Concrete shall be placed within 15 minutes after it has been discharged from a truck mixer. No waste water or concrete from equipment cleaning shall be disposed of in forms or on completed pavement.

3.7.2 Cold-Weather Requirements

The ambient temperature of the space adjacent to the concrete placement and the concrete surface to receive the concrete placement during cold weather shall be above 40 degrees F. Concrete, when deposited in the forms during cold weather shall have a temperature of not less than 40 degrees F. When heating is necessary to keep the concrete temperature above 40 degrees F, it shall be regulated so that the concrete temperature does not exceed 75 degrees F. Salt, chemicals, or other foreign materials shall not be mixed with the concrete to prevent freezing. Any concrete damaged by freezing shall be removed and replaced at the expense of the Contractor.

3.7.3 Hot-Weather Requirements

When the rate of evaporation of surface moisture, as determined by use of Figure 4.1 of ACI 308R, is expected to exceed 0.2 pound per square foot per hour, provisions for windbreaks, shading, fog spraying, or covering with a

light-colored material shall be made in advance of placement, and such protective measures shall be taken as quickly as finishing operations will allow. All concrete placed during warm weather shall be delivered to the forms at the coolest temperature that is practicable to produce under current conditions but not above 95 degrees F. Concrete shall contain a retarding admixture if its temperature exceeds 85 degrees F.

3.8 FINISHING

All unformed surfaces shall be float and broom finished to elevations shown, unless otherwise specified. Exterior surfaces shall be sloped for drainage unless otherwise shown. Unformed surfaces shall be finished to a tolerance of 3/8 inch for a float finish. Surfaces to be float finished shall be screeded and darbied or bullfloated to eliminate the ridges and to fill in the voids left by the screed. In addition, the darbying or bullfloating shall fill all surface voids and only slightly embed the coarse aggregate below the surface of the fresh concrete. When the water sheen disappears and the concrete will support a person's weight without more than about 1/4 inch indentation, floating should be completed. Floating should embed large aggregates just beneath the surface, remove slight imperfections, humps, and voids to produce a plane surface, compact the concrete, and consolidate mortar at the surface. Floated surface shall be completed with a broom finish producing uniform corrugations not more than 1/16 inch deep.

3.9 PROTECTION

Immediately after placement, all concrete shall be protected from premature drying and freezing temperatures. All concrete shall be adequately protected from damage. Concrete shall be protected from, the damaging effects of rain for 12 hours, and flowing water for 14 days. Concrete damaged by rain or flowing water shall be removed by the Contractor at no cost to the Government. No repair of damaged concrete will be allowed. The air and forms in contact with concrete shall be maintained at temperatures above 40 degrees F for at least the first 3 days and at temperatures above freezing for the remainder of the specified curing period. During the period of protection removal, the temperature of the air in contact with the concrete shall not be allowed to drop more than 25 degrees F within a 24-hour period. No fire or excessive heat shall be permitted near or in direct contact at any time.

3.10 CURING

Curing operations shall commence immediately after the finishing operations have been completed in the section to be cured. All concrete shall be cured with curing compound for 7 days, except concrete made with Type II, or blended cement and concrete containing pozzolan or GGBF slag, the curing time shall be 14 days. The curing compound shall be applied when the concrete surface is still damp but not wet with free water. Curing compound shall not be applied during rainfall. The entire surface of the paving shall be sprayed uniformly with curing compound. Formed surfaces shall also be sprayed with curing compound as soon as forms are dislodged. Curing compound shall be applied under pressure by mechanical sprayers operating at a minimum pressure of 75 pounds per square inch, and at the rate recommended by the curing compound manufacturer but, in no case greater than 400 square feet per gallon. The spraying equipment shall be of the fully atomizing type equipped so that the compound can be stirred continuously by effective mechanical or other approved means. At the time of use, the compound shall be in a thoroughly mixed condition. Hand

spraying of odd widths or shapes and on concrete surfaces exposed by the removal of forms will be permitted. Curing compound shall not be applied to the inside faces of joints to be sealed. Should the film become damaged from any cause within the required curing period, the damaged portions shall be repaired immediately with additional compound. Failure to provide sufficient cover material of the type specified shall be cause for immediate rejection of all concrete not properly cured.

3.11 FORM REMOVAL

After concrete placement is completed, forms shall not be removed before 12 hours, but shall be removed by 24 hours or as directed by the Contracting Officer.

3.12 JOINT SEALING

Within 15 days after completion of the required curing period, all debris, dirt, laitance and curing compound shall be removed from all types of joints by sandblasting or another approved method. Immediately after cleaning, all joints shall be filled with sealant utilizing equipment and methods recommended by the sealant manufacturer. All joints shall be filled to within 1/8 inch plus or minus 1/16 inch below the pavement surface. The Contractor shall be careful not to over fill or under fill the joints.

3.13 BACKFILLING AND EMBANKMENT DRESSING

Backfilling or dressing operations shall not commence before 14 calendar days after adjacent concrete has been placed or until cylinders cured in accordance with paragraph 10.2.1 of ASTM C 31/C 31M indicate that the concrete has attained at least 75 percent of the specified compressive strength. Operations shall be accomplished in accordance with the compacted fill requirements of Section 31 24 00.00 12 EMBANKMENT paragraph COMPACTED FILL and shall not damage the concrete. Any concrete damaged during backfill operations shall, at the expense of the Contractor, be replaced or repaired as directed by the Contracting Officer. The levee embankment adjacent to the pavement shall be flush with the top of the pavement. No forms or other foreign material of any description shall be left in the levee.

-- End of Section --