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*Port of South Louisiana  
Reserve Grain Facility*

*State Project No. H.013125 (321)  
St. John the Baptist Parish, Louisiana*

***CONTRACT DOCUMENTS  
AND SPECIFICATIONS***

*for*

***Port Improvements  
Reserve Grain Facility  
Under Dock Refurbishment – Phase 1A***

*Prepared By  
Lanier & Associates Consulting Engineers, Inc.  
March 2024*

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*Port of South Louisiana  
Reserve Grain Facility  
Reserve, Louisiana*

UNDER DOCK REFURBISHMENT – PHASE 1A

State Project No. H.013125 (321)



03/27/2024

A handwritten signature in blue ink, appearing to read "Allison K. Gaines".

Lanier & Associates Consulting Engineers, Inc.  
General Provisions, Civil, Structural



03/27/2024

A handwritten signature in blue ink, appearing to read "Thong Hoang Doan".

Lanier & Associates Consulting Engineers, Inc.  
Electrical

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# **CONSTRUCTION PROPOSAL**

to

THE PORT OF SOUTH LOUISIANA

for

STATE PROJECT NO. H.013125 (321)

PORT IMPROVEMENTS TO

RESERVE GRAIN FACILITY - UNDER DOCK REFURBISHMENTS – PHASE 1A

LOCATED IN ST. JOHN THE BAPTIST PARISH

FUNDED IN PART

BY

THE LOUISIANA TRANSPORTATION TRUST FUND

THROUGH THE PORT CONSTRUCTION AND DEVELOPMENT PRIORITY PROGRAM

PREPARED BY

Lanier & Associates Consulting Engineers, Inc.

4101 Magazine Street

New Orleans, LA 70115

(504) 895-0368

TABLE OF CONTENTS

<u>Description</u>	<u>Start</u>	<u>End</u>
Construction Proposal	i	i
Table of Contents	iii	vii

DIVISION 00 - BIDDING AND CONTRACT REQUIREMENTS

Section 00007	Engineers Certificate Seals Page	00007-1	00007-1
Section 00010	Notice to Contractors	00010-1	00010-2
Section 00100	Instructions to Bidders	00100-1	00100-1
Section 00200	Agency Agreement	00200-1	00200-7
Section 00300	LA Public Work Bid Form	00300-1	00300-3
Section 00410	Bid Bond	00410-1	00410-1
Section 00420	Affidavit Regarding Verification of Employees	00420-1	00420-1
Section 00430	Attestations Affidavit	00430-1	00430-2
Section 00470	Corporate Resolution	00470-1	00470-1
Section 00480	Non Collusion Declaration	00480-1	00480-1
Section 00500	Contract	00500-1	00500-2
Section 00600	Performance Bond	00600-1	00600-2
Section 00605	Payment Bond	00605-1	00605-2

Section 00610	Request to Sublet	00610-1	00610-1
Section 00650	Certificates of Liability Insurance	00650-1	00650-2
Section 00700	Supplemental Specifications	00700-1	00700-1
Section 00710	General Provisions	00710-1	00710-73
Section 00800	Special Provisions	00800-1	00800-1
Section 00850	Additional Special Provisions	00850-1	00850-3
Section 00900	Contract Time	00900-1	00900-1

DIVISION 01 - GENERAL REQUIREMENTS

Section 01010	Summary of Work	01010-1	01010-7
Section 01015	Miscellaneous Requirements	01015-1	01015-7
Section 01025	Measurement and Payment	01025-1	01025-5
Section 01035	Change Orders	01035-1	01035-3
Section 01040	Coordination	01040-1	01040-3
Section 01043	Job Site Administration	01043-1	01043-1
Section 01070	Abbreviations, Symbols, Trade Names and Materials	01070-1	01070-2
Section 01090	Reference Standards and Definitions	01090-1	01090-5
Section 01152	Applications for Payment	01152-1	01152-4
Section 01200	Project Meetings	01200-1	01200-4
Section 01300	Submittals	01300-1	01300-5

RESERVE GRAIN FACILITY – UNDER DOCK REFURBISHMENT – PHASE 1A  
STATE PROJECT No. H.013125 (321)

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Section 01310	Construction and Progress Schedules	01310-1	01310-3
Section 01320	Progress Reports	01320-1	01320-1
Section 01380	Construction Photographs	01380-1	01380-1
Section 01390	Pre and Post Surveys	01390-1	01390-1
Section 01395	Safety Plan	01395-1	01395-2
Section 01400	Quality Control and Testing	01400-1	01400-7
Section 01500	Construction Facilities and Temporary Controls	01500-1	01500-5
Section 01505	Mobilization and Demobilization	01505-1	01505-2
Section 01510	Temporary Utilities & Facilities	01510-1	01510-4
Section 01540	Security	01540-1	01540-2
Section 01550	Site Access	01550-1	01550-1
Section 01590	Field Offices	01590-1	01590-1
Section 01600	Material and Equipment	01600-1	01600-3
Section 01610	Transportation and Handling	01610-1	01610-1
Section 01620	Storage and Protection	01620-1	01620-2
Section 01630	Products Options and Substitutions	01630-1	01630-2
Section 01700	Contract Closeout	01700-1	01700-5
Section 01720	Project Record Documents	01720-1	01720-3
Section 01740	Warranties and Bonds	01740-1	01740-2

Section 01750	Construction and Demolition Waste Management	01750-1	01750-3
---------------	--	---------	---------

PROJECT TECHNICAL SPECIFICATIONS

<u>Spec. Number</u>	<u>Description</u>	<u>REV.</u>	<u>PAGES</u>
01 10 00	SCOPE OF WORK	0	9
01 25 00	SUBSTITUTION PROCEDURES	0	3
01 71 10	STORAGE AND PROTECTION	0	2
02 41 19	SELECTIVE DEMOLITION	0	3
03 41 00	PRECAST STRUCTURAL CONCRETE	0	13
05 12 00	STRUCTURAL STEEL FRAMING	0	11
05 50 00	METAL FABRICATIONS	0	5
05 51 19	METAL GRATING STAIRS	0	4
05 52 13	PIPE AND ANGLE RAILINGS	0	5
05 53 13	BAR GRATINGS	0	4
09 90 00	PAINTING AND COATING	0	12
26 05 19	LOW-VOLTAGE ELECTRICAL		
	POWER CONDUCTORS AND CABLES	0	4
26 05 26	GROUNDING AND BONDING FOR		
	ELECTRICAL SYSTEMS	0	6
26 05 29	HANGERS AND SUPPORTS FOR		
	ELECTRICAL SYSTEMS	0	2
26 05 33	RACEWAYS AND BOXES FOR		
	ELECTRICAL SYSTEMS	0	8
26 05 44	SLEEVES AND SLEEVE SEALS FOR		
	ELECTRICAL RACEWAYS AND		
	CABLING	0	3
26 05 53	IDENTIFICATION FOR ELECTRICAL		
	SYSTEMS	0	8
26 08 00	ELECTRICAL SYSTEMS TESTING		
	AND COMMISSIONING	0	30
26 08 00.3	TESTING FORMS	0	44
26 56 00	EXTERIOR LIGHTING	0	4
31 62 16	STEEL PILES	0	6

PROCESS INDUSTRY PRACTICES (PIP) SPECIFICATIONS

PIP CVS02100	SITE PREPARATION, EXCAVATION, AND BACKFILL SPECIFICATION	0	19
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ATTACHMENTS

USACE PERMIT – MVN-2023-00409-EDM  
PONTCHARTRAIN LEVEE DISTRICT - LETTER OF NO OBJECTION



**Engineer's Certificate  
Project Ready to Advertise**

DATE: March 27, 2024

State Project No. H.013125 (321)  
Port Improvements – Reserve Grain Facility – Under Dock Refurbishment Phase 1A  
St. John the Baptist Parish  
Port Construction and Development Priority Program

Port of South Louisiana  
1720 Highway 44  
Reserve, Louisiana 70084

Gentlemen:

I, Allison K. Gaines, P.E., Project Manager, do hereby certify that the plans and specifications included herein for the above named project have been prepared by me or at my direction and control.

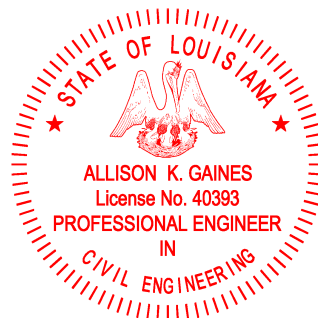
The cost estimates, plans, designs, and the engineering information included therein conform to accepted engineering practice; they have been developed in accordance with the original application for funds that was approved by the Department of Transportation and Development.

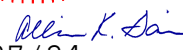
I further certify that they are in accordance with the rules, regulations and procedures governing the Port Construction and Development Priority Program; and that the project is ready to be advertised in accordance with the public bid laws of the State of Louisiana.

Sincerely,



Engineer, LA License No. 40393



  
03/27/24

## NOTICE TO CONTRACTORS

Sealed bids for the construction of the following project will be received by the Port of South Louisiana, 1720 Highway 44, Reserve, Louisiana, 70084 until 10:00 A.M. on May 29, 2024, at which time and place bids will be publicly opened and read. No bids will be received after 10:00 A.M.

Each sealed bid shall state: Attention: Paul Matthews, Executive Director, Sealed Bid for Port of South Louisiana – Reserve Grain Facility - Under Dock Refurbishment - Phase 1A”. The Bidder’s name and Contractor’s License number should be printed outside of the sealed bid envelope.

Bids may be submitted at 1720 Highway 44, Reserve, Louisiana, 70084 or [www.centralbidding.com](http://www.centralbidding.com).

### **A MANDATORY PRE-BID CONFERENCE WILL BE HELD:**

**TIME & DATE: May 16, 2024 at 9:00 A.M.**

**LOCATION: ADM Growmark, 2032 Highway 44, Reserve, LA 70084**

**Bidders must have the following required PPE for the pre-bid conference: Hard hat, safety glasses, safety vest, work boots, gloves, TWIC card. Safety instructions will be provided at the pre-bid conference.**

STATE PROJECT NR: H.013125 (321)

PORT IMPROVEMENTS TO: Reserve Grain Facility - Under Dock Refurbishment

LOCATED IN: St. John the Baptist Parish

TYPE OF CONSTRUCTION: Heavy Marine Construction

CONTRACTING AGENCY: Port of South Louisiana  
1720 Highway 44  
Reserve, LA 70084

ESTIMATED COST: \$2,200,000 - \$2,600,000

PROPOSAL GUARANTY: 5% of the Amount of Bid  
Payable to Port of South Louisiana

ENGINEER: Lanier & Associates Consulting Engineers, Inc.  
4101 Magazine Street  
New Orleans, LA 70115  
(504) 895-0368

Bids must be submitted on the forms provided by the Contracting Agency, must be prepared in accordance with Section 2 of the 2018 Edition of the Louisiana Department of Transportation and Development, Office of Multimodal Commerce, General Provisions and must include all the information required by the bid form. Bid forms are available from the Engineer and will not be issued later than 24 hours prior to the time set for opening the bids. Each bid shall include a proposal guaranty in an amount not less than specified above.

The contract will be awarded to the lowest responsible bidder without discrimination on grounds of race, color, sex or national origin. Disadvantaged businesses will be afforded full opportunity to submit bids.

Plans and specifications may be viewed at the Port of South Louisiana Administration Building from 9:00 a.m. to 4:00 p.m. or at [www.centralbidding.com](http://www.centralbidding.com). Plans and specifications may also be viewed at the Engineer's office. Plans may be obtained from the Engineer upon payment of \$30 (electronic copy) or \$200 (hard copy, 8.5"x11" and 11"x17") in certified check, company or cashier's check payable to the Engineer. In accordance with R.S. 38:2212(D), deposits on the first set of documents furnished to bona fide prime bidders will be fully refunded upon return of the documents, deposits on any additional sets will be refunded less the actual costs of reproduction. Refunds will be made upon return of the documents if within ten days after receipt of bids.

In accordance with 38:2212 B(2) Any public entity advertising for public work shall use only the Louisiana Uniform Bid Form as promulgated in accordance with the Administrative Procedure Act by the division of administration, office of facility planning and control. The bidding documents shall require only the following information and documentation to be submitted by a bidder at the time designated in the advertisement for bid opening: Bid Security or Bid Bond; Acknowledgment of Addenda; Base Bid; Alternates; Signature of Bidder; Name, Title, and Address of Bidder; Name of Firm or Joint Venture; Corporate Resolution or written evidence of the authority of the person signing the bid; and Louisiana Contractors License Number, and on public works projects where unit prices are utilized, a section on the bid form where the unit price utilized in the bid shall be set forth including a description for each unit; however, unit prices shall not be utilized for the construction of building projects, unless the unit prices and their extensions are incorporated into the base bid or alternates. If a public entity adds any additional requirements for information, unless mandated by state or federal requirements, the requirements shall be void and not considered in the award of the contract. Any timely change by a bidder to the bid prior to submission of the bid shall be scratched through and initialed by the bidder or the person who submits the bid. The change as initialed shall be binding.

B (3)(a) The bidding documents shall not require any bidder, other than the apparent low bidder, to furnish any other information or documentation, including the Attestation Affidavit and the E-Verification Form, any sooner than ten days after the date bids are opened; however, the apparent low bidder may submit such information or documentation at any time prior to the expiration of the ten-day period. If the apparent low bidder does not submit the proper information or documentation as required by the bidding documents within the ten-day period, such bidder shall be declared non-responsive, and the public entity may award the bid to the next lowest bidder, and afford the next lowest bidder not less than ten days from the date the apparent low bidder is declared non-responsive, to submit the proper information and documentation as required by the bidding documents, and may continue such process until the public entity either determines the low bidder or rejects all bids.

In accordance with La R.S. 38:2212B.(5) Written evidence of the authority of the person signing the bid for public works shall be submitted at the time of bidding. The authority of the signature of the person submitting the bid shall be deemed sufficient and acceptable if any of the following conditions are met:

(a) The signature on the bid is that of any corporate officer listed on the most current annual report on file with the secretary of state, or the signature on the bid is that of any member of a partnership, limited liability company, limited liability partnership, or other legal entity listed in the most current business records on file with the secretary of state.

(b) The signature on the bid is that of an authorized representative as documented by the legal entity certifying the authority of the person.

(c) The legal entity has filed in the appropriate records of the secretary of state of this state, an affidavit, resolution, or other acknowledged or authentic document indicating the names of all parties authorized to submit bids for public contracts. Such document on file with the secretary of state shall remain in effect and shall be binding upon the principal until specifically rescinded and canceled from the records of the office.

All required Certificates of Liability Insurance shall list the Port of South Louisiana as "additionally insured".

Contractor employees must be able to legally work in the United States – either a U.S. citizen or foreign citizen who has the necessary authorization (E-Verify).

All applicable Federal, State, Local laws, ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the project shall apply to the contract throughout.

Each Bidder must deposit with his/her bid, security in the amount of at least five percent (5%) of the total bid price, provided on the specified form and subject to the conditions provided in the Information for Bidders. Bid Security shall be in the form of a cashier's check, certified check or a bid bond.

The Owner and lowest responsive and responsible bidder may, by mutual agreement, extend the award by one or more thirty (30) calendar day extensions.

The work shall be substantially completed within 113 calendar days.

The work shall be fully completed within 126 calendar days.

A Notice to Proceed will be issued for the Project. All work is to commence within seven (7) consecutive calendar days after the issue of Notice to Proceed.

No bidder may withdraw his/her bid within sixty (60) days after the actual date of the opening thereof except as provided under La. R.S. 38:2214 c.

Port of South Louisiana is tax exempt and will issue a Designation of Construction Contractor as Agent of a Governmental Entity Sales Tax Exemption Certificate to the successful bidder.

Liquidated Damages shall be assessed for every day beyond the date of completion as established in section SP-3 of the Additional Special Provisions Section 00850, which supersedes the damages described in the General Provisions.

The award of a contract, if awarded, will be made to the lowest qualified bidder whose proposal complies with all requirements prescribed within 45 calendar days after opening proposals. However, when the contract is to be financed by bonds which are required to be sold after receipts of bids, or when the contract is to be financed in whole or part by federal or other funds not available at the time bids are received, the time will not start until receipt of federal and/or state concurrence or concurrence of the other funding source. Award will be within 30 calendar days after the sale of bonds or receipt of concurrence in award from federal and/or state agency or other funding source. The successful bidder will be notified by letter mailed to the address shown in the proposal that the bidder is awarded the contract.

The award of a contract for projects financed either partially or entirely with State bonds will be contingent on approval by the State Bond Commission.

On projects involving federal funds the award of contract will also be contingent upon concurrence by the appropriate federal agency.

On projects involving state funds the award of contract will also be contingent upon concurrence by the appropriate state agency.

The Port reserves the right to reject bids for just cause and waive any informalities.

Bid advertisement dates: 4/25/24; 5/2/24; 5/9/24.

Paul Matthews  
Executive Director  
Port of South Louisiana

**SECTION 00100 - INSTRUCTIONS TO BIDDERS**  
**STATE PROJECT NO. H.013125 (321)**

**OBLIGATION OF BIDDER:** The submittal of a bid will be understood to indicate that the bidder has inspected the work site and has become thoroughly familiar with the plans, general provisions, special provisions, supplemental specifications, and technical specifications. The failure or omission of any bidder to examine any of the above shall in no way relieve him from any obligation in respect to his/her bid.

**BID FORMS:** Bids/Proposals shall be prepared in accordance with Section 2 of the 2018 Edition of the Louisiana Department of Transportation and Development, Office of Multimodal Commerce, General Provisions.

**Forms to be completed for bid are as follows:**

1. Louisiana Uniform Public Work Bid Form
2. Bid Bond
3. Power of Attorney (for Bid Bond)
4. Corporate Resolution Authorizing Signing of Bid

**Forms to be completed with the contract are as follows:**

1. Contract
2. Performance and Payment Bond
3. Power of Attorney (for Performance and Payment Bond)
4. Non Collusion Declaration (The successful bidder will be required to submit a Non Collusion Declaration with the contract)
5. Attestations Form

SECTION 00200 – AGENCY AGREEMENT  
STATE PROJECT No. H.013125 (321)

This **AGENCY AGREEMENT** (Agreement") made between Port of South Louisiana ("*Principal*"), a political subdivision of the State of Louisiana (the "State"), whose registered office is 1720 Highway 44, Reserve, Louisiana, 70084, created, operating and existing under the provisions of Chapter 30, Title 34, of the Louisiana Revised Statutes of 1950, herein represented by Paul Matthews, its Executive Director, and \_\_\_\_\_ ("*Agent*"), a company duly organized and existing under the laws of the State of Louisiana, and qualified to do business in the State of Louisiana, having an office for the conduct of business at \_\_\_\_\_ herein represented by \_\_\_\_\_, its \_\_\_\_\_.

**WITNESSETH:**

**WHEREAS**, *Principal* is authorized and empowered under the laws of the State, including particularly Section 2471 through 2477, inclusive, of Title 34 of the Louisiana Revised Statutes of 1950, as amended (the "Act") , to acquire, construct or improve port facilities; and

**WHEREAS**, *Agent* is the contractor or subcontractor for the “Reserve Grain Facility – Under Dock Refurbishment” with all equipment, supplies or materials required therefore (the Project Facilities), for the efficient construction of the project as required by Plans and Specifications bearing the title **Reserve Grain Facility – Under Dock Refurbishment – Phase 1A** dated 12/12/2023 and located within the Port of South Louisiana facility in the Parish of St. John the Baptist, State of Louisiana, pursuant to a contract or subcontract dated \_\_\_\_\_; and \_\_\_\_\_.

**WHEREAS**, the Project Facilities will be acquired, constructed and installed on the Project Site by the *Agent*, and both the Project Facilities and the Project Site (collectively, the "Project"), will be owned by *Principal*;

**WHEREAS**, all acts and conditions required by the laws of this State and the rules and regulations of the *Principal* to happen, exist and be performed precedent to and in execution and delivery of this *Agreement* have occurred and have been performed so as to have a valid and binding agreement in accordance with its terms; and

**WHEREAS**, *Agent* and *Principal* (the "Parties") represent they are fully authorized to enter into and fulfill the obligations imposed by this *Agreement*.

**NOW, THEREFORE**, the parties acknowledge and agree as follows:

**ARTICLE 1**  
**REPRESENTATIONS**

1.1 *Principal* makes the following representations as the basis for the undertaking upon its part herein contained:

- (a) *Principal* is duly organized and existing under the laws of the State as a political subdivision of the State, created operating and existing under the provisions of Chapter 30, Title 34, of the Louisiana revised Statutes of 1950, as amended, with full power and authority to enter into this Agreement, and acting by and through its Board of Commissioners, its governing authority, in the public interest and for a public purpose, providing for economic and employment opportunities for the persons who reside in the geographic area of the *Principal* and to add to the welfare and prosperity of the State of such inhabitants, all pursuant to the Act's provisions. It is also noted that the Principal and Owner are one in the same.
- (b) This *Agreement* has been duly authorized, executed and delivered by *Principal* and is legal, valid and binding.

1.2 *Agent* makes the following representations as the basis for the undertaking on its part herein contained:

- (a) *Agent* is a \_\_\_\_\_ company duly authorized, validly existing and in good standing under the laws of the State of Louisiana and is qualified to do business as a company in good standing in the State. *Agent* has the power and authority to enter into this *Agreement* and has duly authorized the execution and delivery of this *Agreement*. It is also noted that the Agent and Contractor are one in the same.
- (b) This *Agreement* has been duly authorized, executed and delivered by *Agent* and constitutes the legal, valid and binding enforceable obligation of *Agent*, except as may be limited by bankruptcy, insolvency, reorganization, moratorium or other similar laws relating to or affecting rights of creditors generally and by general principals of equity regardless of whether considered in a proceeding in equity or at law.
- (c) The execution and delivery of this *Agreement* and the consummation of the transactions herein contemplated do not and will not (i) violate the *Agent's* articles of organization or incorporation, and (ii) conflict with or constitute on the part of the *Agent* a breach or violation of any terms and provisions of, or a default under, any statute, rule or regulation or any agreement, indenture, mortgage, lease, deed of trust, note or other instrument, or any decree or order of any court which *Agent* is subject or by which it or its properties are or may be bound.
- (d) All licenses, permits, consents, approvals, certificates, authorization and registrations

required to be obtained by *Agent* for *Agent's* execution and delivery of this agreement and for *Agent's* performance of its obligations under this Agreement have been obtained by *Agent* and are in full force and effect or will be obtained.

**ARTICLE 2**  
**EXECUTION OF THE AGREEMENT**

- 2.1 This *Agreement* shall be executed and enforced in conjunction with the Contract or Subcontract Agreement dated \_\_\_\_\_, 2024 between Principal and Agent (the "*Contract*").

**ARTICLE 3**  
**NATURE OF THE PROJECT**

- 3.1 The parties hereby specifically understand and agree the *Agreement's* purpose is to grant *Agent* the authority to construct "Reserve Grain Facility - Under Dock Refurbishment" and all other improvements as shown and intended on the drawings and contained within these specifications, together with all equipment, supplies or materials required therefore functionally related and subordinated thereto as required in the *Contract*.

**ARTICLE 4**  
**PROJECT WORK**

- 4.1 The parties recognize, agree and understand that the project will be performed for the benefit of the *Principal* on the Project Site under *Agent's* direction and that the improvements will be owned by *Principal*.
- 4.2 *Agent* shall cause the project work to be completed at the Project Site substantially in accordance with the *Contract* and Plans and Specification (as amended or modified from time to time in accordance with the *Contract*) in the name of the *Principal* and for the benefit of the *Principal*.
- 4.3 Subject to the approval of *Principal* or its designated representative, *Agent* shall make or issue contracts orders, receipts, instructions, and in general do or cause to be done all such other things as *Agent* shall deem advisable and/or necessary for completing the project work in accordance with the Plans and Specifications.

**ARTICLE 5**  
**AGENT'S AUTHORITY**

- 5.1 **Creation of Authority** - This *Agreement* is a contract of mandate and grants *Agent* authority to transact business for and in *Principal's* name in accordance with Louisiana Civil Code Article 2985 as may be required and limited by the *Contract* or Plans and Specifications.
- 5.2 **Extent of *Agent's* Authority** - *Agent* shall make all acquisitions and perform all acts or things for the benefit of the *Principal* and in its name as may be required and limited by the *Contract* or Plans and Specifications. The authority granted includes the authority to do or cause to be done



all things *Agent* shall deem advisable and/or necessary for the acquisition, construction and installation of the Projects Facilities consistent with the *Contract* and Plans and Specifications, as amended from time to time.

- 5.3 *Agent* has authority to purchase all or any materials, supplies, or equipment for the Project's construction as required by the *Contract* or Plans and Specifications.
- 5.4 The authority granted herein and particularly 5.2 and 5.4 shall be subject to prior approval by the *Principal* or its representatives.
- 5.5 **Apparent Authority** - The parties do not intend to conduct their affairs in such a way as to create any apparent authority in *Agent* that exceeds the actual authority this *Agreement* creates.
- 5.6 **Submission of Business Records to *Principal*** - *Agent* shall keep complete and organized records of all *Principal's* business transacted by *Agent* in performance of this *Agreement*.
- 5.7 *Agent* shall submit to *Principal* any reasonably required reports regarding *Agent's* duties under the terms of this *Agreement*.
- 5.8 *Agent* shall provide within a reasonable time (not exceeding thirty (30) days), copies of all invoices, contracts, agreements, receipts, orders and any other related documents *Agent* has received, delivered or executed in facilitating the Project's construction.
- 5.9 **Continuing Nature of *Agent's* Authority** - Unless revoked in writing by *Principal*, this authorization is a continuing one and shall remain in full force and effect from the date hereof until completion of construction of the Project as required by the *Contract* or Plans and Specifications.

**ARTICLE 6**  
**MISCELLANEOUS**

6.1 **Notices** - All notices required or which may be given hereunder shall be considered as properly given either (a) when delivered in person to the recipient named as below or (b) upon receipt when sent in the United States mail in a sealed envelope or contained, certified mail return receipt requested, postage and postal charges prepaid or (c) upon receipt when sent by Federal Express addressed by name and address to the party or persons intended as follows:

**Notice to Principal:** Port of South Louisiana  
1720 Highway 44  
Reserve, Louisiana 70084

ATTN: Paul Matthews  
Executive Director  
PHONE: (985) 652-9278  
FAX: (504) 568-6270

**Notice to Agent:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

6.2 **Choice of Law** - The validity, interpretation, performance and enforcement of this *Agreement* shall be governed by the laws of the State of Louisiana (without giving effect to the laws, rules and principles of the State of Louisiana regarding conflicts of law). Each party agrees that any proceeding arising out of or relating to this *Agreement* or the breach or threatened breach of this *Agreement* will be commenced and prosecuted in a court in the State of Louisiana. Each party consents and submits to the non-exclusive personal jurisdiction of any court in the State of Louisiana in respect of each such proceeding. Each party consents to the service of process upon it with respect to any such proceeding by registered mail, return receipt requested, and by any other means permitted by the applicable laws and rules of the State of Louisiana. Each party waives any objection that it may now or hereafter have to the laying or venue of any such proceeding arising out of this *Agreement* in any court in the State of Louisiana, and any claim it may now or hereafter have that any such proceeding arising out of this *Agreement* and any court of the State of Louisiana has been brought in an inconvenient forum. Each party further waives a trial by jury in any proceeding commenced in the State of Louisiana as provided for herein.

6.3 **Assignment; Beneficiaries** - This *Agreement* shall be binding upon the parties and their respective successors and assigns and will inure to the benefit of the parties and their respective successors and assigns, provided no assignment hereunder shall be valid unless approved by the Principal nor shall the assignor be relieved of its obligations hereunder unless and until the assignee shall have performed in full.

- 6.4 **Waivers** - No waiver of any provisions of this agreement will be binding upon a party hereto unless its waiver is expressly set forth in a written instrument which is executed and delivered on behalf of such party by an officer of, or an attorney-in-fact for, such party. Such waiver will be effective only to the extent specifically set forth in such written instrument. Neither the exercise (from time to time and any time) by a party of, nor the delay or failure (at any time of for any period of time) to exercise any right, power or remedy will constitute a waiver of the right to exercise or impair, limit or restrict the exercise of, such right, power or remedy or any other right, power or remedy at any time and from time to time thereafter. No waiver of any right, power or remedy of a party will be deemed to be a waiver of any other right, power or remedy of such party or will, except to the extent so waived, impair, limit or restrict the exercise of such right, power or remedy.
- 6.5 **Headings; Counterparts** - The headings, but not the recitals, set forth in this *Agreement* have been inserted for convenience of reference only, and will not be considered a part of this *Agreement*, and will not limit, modify or affect in any way the meaning or interpretation of this *Agreement*. This *Agreement* may be signed in any number of counterparts, each of which (when executed and delivered) will constitute an original instrument, but all of which taken together will constitute one in the same instrument.
- 6.6 **Severability** - If any provisions of this *Agreement* shall hereafter be held to be invalid, unenforceable or illegal, in whole or in part, under the laws of the State of Louisiana, such provisions (i) be reformed to the minimum extent necessary to cause such provisions to be valid, enforceable and legal while preserving the intent of the parties as expressed in, and the benefits to the parties provided by, this *Agreement* (ii) if such provisions cannot be so reformed, such provisions will be severed from this *Agreement* and an equitable adjustment will be made to this *Agreement* including the addition of necessary, further provisions to this *Agreement* so as to give affect to the intent so expressed and the benefit as provided. Neither such holding or such reformation or severance will affect or impair the legality, validity or enforceability of any other provisions of this *Agreement*.

**THUS DONE AND SIGNED** on this \_\_\_\_\_ day of \_\_\_\_\_, 2024, in the presence of the undersigned competent witnesses.

WITNESSES:

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

"PRINCIPAL"  
THE PORT OF SOUTH LOUISIANA  
COMMISSION

BY \_\_\_\_\_  
PAUL MATTHEWS  
EXECUTIVE DIRECTOR

\_\_\_\_\_  
NOTARY PUBLIC  
MY COMMISSION EXPIRES AT DEATH

**THUS DONE AND SIGNED**, on this \_\_\_\_ day of \_\_\_\_\_ 2024, in the presence of the undersigned competent witnesses.

WITNESSES:

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

"AGENT"

BY \_\_\_\_\_

\_\_\_\_\_  
NOTARY PUBLIC  
MY COMMISSION EXPIRES:

# LOUISIANA UNIFORM PUBLIC WORK BID FORM

**TO:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

*(Owner to provide name and address of owner)*

**BID FOR:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

*(Owner to provide name of project and other identifying information)*

The undersigned bidder hereby declares and represents that she/he: a) has carefully examined and understands the Bidding Documents, b) has not received, relied on, or based his bid on any verbal instructions contrary to the Bidding Documents or any addenda, c) has personally inspected and is familiar with the project site, and hereby proposes to provide all labor, materials, tools, appliances and facilities as required to perform, in a workmanlike manner, all work and services for the construction and completion of the referenced project, all in strict accordance with the Bidding Documents prepared by: \_\_\_\_\_ and dated: \_\_\_\_\_

*(Owner to provide name of entity preparing bidding documents.)*

Bidders must acknowledge all addenda. The Bidder acknowledges receipt of the following **ADDENDA:** (Enter the number the Designer has assigned to each of the addenda that the Bidder is acknowledging) \_\_\_\_\_ .

**TOTAL BASE BID:** For all work required by the Bidding Documents (including any and all unit prices designated "Base Bid" \* but not alternates) the sum of:

\_\_\_\_\_ Dollars (\$ \_\_\_\_\_)

**ALTERNATES:** For any and all work required by the Bidding Documents for Alternates including any and all unit prices designated as alternates in the unit price description.

**Alternate No. 1** *(Owner to provide description of alternate and state whether add or deduct)* for the lump sum of:

\_\_\_\_\_ Dollars (\$ \_\_\_\_\_)

**Alternate No. 2** *(Owner to provide description of alternate and state whether add or deduct)* for the lump sum of:

\_\_\_\_\_ Dollars (\$ \_\_\_\_\_)

**Alternate No. 3** *(Owner to provide description of alternate and state whether add or deduct)* for the lump sum of:

\_\_\_\_\_ Dollars (\$ \_\_\_\_\_)

**NAME OF BIDDER:** \_\_\_\_\_

**ADDRESS OF BIDDER:** \_\_\_\_\_  
\_\_\_\_\_

**LOUISIANA CONTRACTOR'S LICENSE NUMBER:** \_\_\_\_\_

**NAME OF AUTHORIZED SIGNATORY OF BIDDER:** \_\_\_\_\_

**TITLE OF AUTHORIZED SIGNATORY OF BIDDER:** \_\_\_\_\_

**SIGNATURE OF AUTHORIZED SIGNATORY OF BIDDER \*\*:** \_\_\_\_\_

**DATE:** \_\_\_\_\_

## **THE FOLLOWING ITEMS ARE TO BE INCLUDED WITH THE SUBMISSION OF THIS LOUISIANA UNIFORM PUBLIC WORK BID FORM:**

\* The Unit Price Form shall be used if the contract includes unit prices. Otherwise it is not required and need not be included with the form. The number of unit prices that may be included is not limited and additional sheets may be included if needed.

\*\* **A CORPORATE RESOLUTION OR WRITTEN EVIDENCE** of the authority of the person signing the bid for the public work as prescribed by LA R.S. 38:2212(B)(5).

**BID SECURITY** in the form of a bid bond, certified check or cashier's check as prescribed by LA R.S. 38:2218(A) attached to and made a part of this bid.

# LOUISIANA UNIFORM PUBLIC WORK BID FORM

## UNIT PRICE FORM

**TO:** \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

*(Owner to provide name and address of owner)*

**BID FOR:** \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

*(Owner to provide name of project and other identifying information)*

**UNIT PRICES:** This form shall be used for any and all work required by the Bidding Documents and described as unit prices. Amounts shall be stated in figures and only in figures.

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# ___ MOBILIZATION & DEMOBILIZATION			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity times Unit Price)</i>
001	1	LUMP SUM		

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# ___ SURVEYING			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity times Unit Price)</i>
002	1	LUMP SUM		

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# ___ DEMOLITION			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity times Unit Price)</i>
003	1	LUMP SUM		

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# ___ DEGRADING			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity times Unit Price)</i>
004	4,900	CUBIC YARD		

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# ___ NEW APPROACHWAY			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity times Unit Price)</i>
005	1	LUMP SUM		

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# ___ NEW ELEVATED GUARD SHACK FRAMING			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity times Unit Price)</i>
006	1	LUMP SUM		

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# ___ NEW GUARD SHACK			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity times Unit Price)</i>
007	1	LUMP SUM		

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# ___ NEW SECURITY GATE			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity times Unit Price)</i>
008	1	LUMP SUM		

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# ___ NEW LIGHTING			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION <i>(Quantity times Unit Price)</i>
009	1	LUMP SUM		

DESCRIPTION:	<input type="checkbox"/> Base Bid or <input type="checkbox"/> Alt.# ___ COORDINATION WITH SCAFFOLDING CONTRACTOR			
REF. NO.	QUANTITY:	UNIT OF MEASURE:	UNIT PRICE	UNIT PRICE EXTENSION ( <i>Quantity times Unit Price</i> )
010	1	LUMP SUM		

**Wording for “DESCRIPTION” is to be provided by the Owner.**

**All quantities are estimated. The contractor will be paid based upon actual quantities as verified by the Owner**

**SECTION 00410 - BID BOND**

FOR: Reserve Grain Facility – Under Dock Refurbishment – Phase 1A  
State Project No. H.013125 (321)

Date: \_\_\_\_\_

KNOW ALL PERSONS BY THESE PRESENTS:

That \_\_\_\_\_ of \_\_\_\_\_, as Principal, and \_\_\_\_\_, as Surety, are held and firmly bound unto the \_\_\_\_\_ (Obligee), in the full and just sum of five (5%) percent of the total amount of this bid, including all alternates, lawful money of the United States, for payment of which sum, well and truly be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally firmly by these presents.

Surety represents that it is listed on the current U. S. Department of the Treasury Financial Management Service list of approved bonding companies as approved for an amount equal to or greater that the amount for which it obligates itself in this instrument or that it is a Louisiana domiciled insurance company with at least an A - rating in the latest printing of the A. M. Best's Key Rating Guide. If surety qualifies by virtue of its Best's listing, the Bond amount may not exceed ten percent of policyholders' surplus as shown in the latest A. M. Best's Key Rating Guide.

Surety further represents that it is licensed to do business in the State of Louisiana and that this Bond is signed by surety's agent or attorney-in-fact. This Bid Bond is accompanied by appropriate power of attorney.

THE CONDITION OF THIS OBLIGATION IS SUCH that, whereas said Principal is herewith submitting its proposal to the Obligee on a Contract for:

Reserve Grain Facility – Under Dock Refurbishment

NOW, THEREFORE, if the said Contract be awarded to the Principal and the Principal shall, within such time as may be specified, enter into the Contract in writing and give a good and sufficient bond to secure the performance of the terms and conditions of the Contract with surety acceptable to the Obligee, then this obligation shall be void; otherwise this obligation shall become due and payable.

\_\_\_\_\_  
PRINCIPAL (BIDDER)

\_\_\_\_\_  
SURETY

BY: \_\_\_\_\_  
AUTHORIZED OFFICER-OWNER-PARTNER

BY: \_\_\_\_\_  
AGENT OR ATTORNEY-IN-FACT(SEAL)



SECTION 00420 - AFFIDAVIT REGARDING VERIFICATION OF EMPLOYEES

STATE PROJECT No. H.013125 (321)

STATE OF Louisiana

PARISH/COUNTY OF St. John the Baptist

BEFORE ME, the undersigned Notary, came and appeared  
\_\_\_\_\_ (name), \_\_\_\_\_ (office/position)  
of \_\_\_\_\_ (name of Bidder/Proposer) (hereinafter, "Appearer")  
who after being duly sworn did depose and say

- A. He/She is an authorized signatory of Appearer and is authorized to legally execute this Affidavit on behalf of Appearer.
- B. Appearer is registered and participates in a status verification system to verify that all employees in the State of Louisiana are legal citizens of the United States or are legal aliens.
- C. If awarded the contract, Appearer shall continue, during the term of the contract, to utilize a status verifications system to verify the legal status of all new employees in the state of Louisiana.
- D. If awarded the contract, Appearer shall require all subcontractors to submit to it a sworn affidavit verifying compliance with Paragraphs (A) and (B) of this Subsection.

\_\_\_\_\_ (Sign name)

\_\_\_\_\_ (Print name)

SWORN TO AND SUBSCRIBED BEFORE ME, this \_\_\_\_\_ day of \_\_\_\_\_

\_\_\_\_\_ (Sign Notary name)

\_\_\_\_\_ (Print Notary name)

Notary Public No. \_\_\_\_\_

STATE OF LOUISIANA

PARISH OF ST. JOHN THE BAPTIST

**ATTESTATIONS AFFIDAVIT**

**Before me**, the undersigned notary public, duly commissioned and qualified in and for the parish and state aforesaid, personally came and appeared Affiant, who after being duly sworn, attested as follows:

**LA. R.S. 38:2227 PAST CRIMINAL CONVICTIONS OF BIDDERS**

A. No sole proprietor or individual partner, incorporator, director, manager, officer, organizer, or member who has a minimum of a ten percent (10%) ownership in the bidding entity named below has been convicted of, or has entered a plea of guilty or nolo contendere to any of the following state crimes or equivalent federal crimes:

- |                                       |                                    |
|---------------------------------------|------------------------------------|
| (a) Public bribery (R.S. 14:118)      | (c) Extortion (R.S. 14:66)         |
| (b) Corrupt influencing (R.S. 14:120) | (d) Money laundering (R.S. 14:230) |

B. Within the past five years from the project bid date, no sole proprietor or individual partner, incorporator, director, manager, officer, organizer, or member who has a minimum of a ten percent (10%) ownership in the bidding entity named below has been convicted of, or has entered a plea of guilty or nolo contendere to any of the following state crimes or equivalent federal crimes, during the solicitation or execution of a contract or bid awarded pursuant to the provisions of Chapter 10 of Title 38 of the Louisiana Revised Statutes:

- |  |  |
|--|--|
| (a) Theft (R.S. 14:67)                           | (f) Bank fraud (R.S. 14:71.1)                                |
| (b) Identity Theft (R.S. 14:67.16)               | (g) Forgery (R.S. 14:72)                                     |
| (c) Theft of a business record<br>(R.S.14:67.20) | (h) Contractors; misapplication of<br>payments (R.S. 14:202) |
| (d) False accounting (R.S. 14:70)                | (i) Malfeasance in office (R.S. 14:134)                      |
| (e) Issuing worthless checks<br>(R.S. 14:71)     |  |

**LA. R.S. 38:2212.10 Verification of Employees**

- A. At the time of bidding, Appearer is registered and participates in a status verification system to verify that all new hires in the state of Louisiana are legal citizens of the United States or are legal aliens.
- B. If awarded the contract, Appearer shall continue, during the term of the contract, to utilize a status verification system to verify the legal status of all new employees in the state of Louisiana.
- C. If awarded the contract, Appearer shall require all subcontractors to submit to it a sworn affidavit verifying compliance with Paragraphs (A) and (B) of this Subsection.

RESERVE GRAIN FACILITY – UNDER  
DOCK REFURBISHMENT – PHASE 1A  
**Name of Project**

H.013125 (321)  
**Project No.**

**LA. R.S. 23:1726(B) Certification Regarding Unpaid Workers Compensation Insurance**

- A. R.S. 23:1726 prohibits any entity against whom an assessment under Part X of Chapter 11 of Title 23 of the Louisiana Revised Statutes of 1950 (Alternative Collection Procedures & Assessments) is in effect, and whose right to appeal that assessment is exhausted, from submitting a bid or proposal for or obtaining any contract pursuant to Chapter 10 of Title 38 of the Louisiana Revised Statutes of 1950 and Chapters 16 and 17 of Title 39 of the Louisiana Revised Statutes of 1950.
- B. By signing this bid /proposal, Affiant certifies that no such assessment is in effect against the bidding / proposing entity.

\_\_\_\_\_  
**NAME OF BIDDER**

\_\_\_\_\_  
**NAME OF AUTHORIZED SIGNATORY OF BIDDER**

\_\_\_\_\_  
**DATE**

\_\_\_\_\_  
**TITLE OF AUTHORIZED SIGNATORY OF BIDDER**

\_\_\_\_\_  
**SIGNATURE OF AUTHORIZED  
SIGNATORY OF BIDDER/AFFIANT**

**Sworn to and subscribed** before me by Affiant on the \_\_\_\_ day of \_\_\_\_\_, 2024 .

\_\_\_\_\_  
Notary Public

**SECTION 00470 - CORPORATE RESOLUTION**  
STATE PROJECT No. H.013125 (321)

BE IT RESOLVED by the Board of Directors of \_\_\_\_\_  
in a meeting duly assembled that \_\_\_\_\_,  
of the Corporation, be and he/she is hereby authorized, empowered, and directed for and on the  
Corporation to negotiate for and sign any and all bid proposals and/or contractors which this  
corporation might enter into for the furnishing of services for the Corporation under such terms,  
conditions and stipulations, and for such consideration as he might deem to the best interest of  
the Corporation.

\* \* \* \* \*

I, \_\_\_\_\_ (Name)  
Secretary of \_\_\_\_\_ do  
hereby certify that the above and forgoing is a true and correct copy  
of a Resolution unanimously adopted at a meeting of the Board of  
Directors of said Corporation held on the \_\_\_\_\_ day of  
\_\_\_\_\_, 20\_\_, at which meeting all members of the Board of  
Directors were present and voted thereon and that said Resolution has  
been spread upon the minute books of the Corporation, and same is  
now in full force and effect.

WITNESS MY SIGNATURE, this \_\_\_\_\_ day of  
\_\_\_\_\_, 20\_\_, at \_\_\_\_\_,

\_\_\_\_\_

**SECTION 00480 - NON COLLUSION DECLARATION**

A sworn statement shall be submitted in the form of an affidavit as indicated below, executed and sworn to by the bidder before persons authorized by laws of the State to administer oaths.

**Affidavit**

State Project Number: H.013125 (321)

Name of Project: RESERVE GRAIN FACILITY- UNDER DOCK REFURBISHMENT - PHASE 1A

Parish: ST. JOHN THE BAPTIST

\_\_\_\_\_ (an individual)  
(a partnership)  
(a corporation)

certify that:

(1) That affiant employed no person, corporation, firm, association, or other organization, either directly or indirectly, to secure the public contract under which he received payment, other than persons regularly employed by the affiant whose services in connection with the construction, alteration or demolition of the public building or project or in securing the public contract were in the regular course of their duties for affiant, and

(2) That no part of the contract price received by affiant was paid or will be paid to any person, corporation, firm, association, or other organization for soliciting the contract, other than the payment of their normal compensation to persons regularly employed by the affiant whose services in connection with the construction, alteration or demolition of the public building or project were in the regular course of their duties for affiant.

\_\_\_\_\_ (an individual)  
(a partnership)  
(a corporation)

Signed \_\_\_\_\_

By \_\_\_\_\_

Title \_\_\_\_\_

Parish or county \_\_\_\_\_

State of \_\_\_\_\_

Subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_.

My commission expires the \_\_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_.

\_\_\_\_\_  
Notary Public

**SECTION 00500 – CONTRACT**  
STATE PROJECT No H.013125 (321)

This agreement is made and executed in \_\_\_\_\_ original copies, on this  
\_\_\_\_\_ day of \_\_\_\_\_ 2024, between

\_\_\_\_\_ acting through \_\_\_\_\_,

Party of the First Part, hereinafter designated as the "Contracting Agency", and \_\_\_\_\_

\_\_\_\_\_, Contractor,  
Party of the Second Part, hereinafter designated as "Contractor".

In consideration of the agreements herein contained, to be performed by the parties hereto and of the payments hereinafter agreed to be made, it is mutually agreed as follows:

The Contractor will provide all materials, equipment and labor and perform the work required to complete in a thorough and workmanlike manner, to the satisfaction of the Contracting Agency,

State Project Number H.013125 (321) entitled \_\_\_\_\_

\_\_\_\_\_ located in ST. JOHN THE BAPTIST

Parish, consisting of \_\_\_\_\_

\_\_\_\_\_ in accordance with the plans and proposal on file at the Contracting Agency's Office, and with the 2016 Louisiana Standard Specifications for Roads and Bridges, and with the proposal, including the supplementary specifications, general provisions and special provisions accompanying said proposal; copy of said plans, specifications and proposal are made a part hereof and hereby become a part of this contract.

The Contractor agrees to accept and the Contracting Agency agrees to pay for the work at the prices stipulated in said Proposal in lawful money of the United States in the time and manner set forth in the Standard Specifications.

Performance shall begin on the date stipulated in the "Notice to Proceed" and shall be completed within the time specified in said Proposal, subject to such extensions as may be authorized.

Total cost of State Project Number H.013125 (321) is \_\_\_\_\_ DOLLARS (\$\_\_\_\_\_).

This contract shall become effective on the date all parties hereto have signed the same.

In witness whereof, the \_\_\_\_\_ has hereunto subscribed his name, and the same has been approved by the \_\_\_\_\_, and \_\_\_\_\_, Contractor, has also hereunto subscribed his name.

BY \_\_\_\_\_  
Contractor

\_\_\_\_\_  
Federal Identification Number

\_\_\_\_\_  
Witness

BY \_\_\_\_\_

\_\_\_\_\_  
Witness

\_\_\_\_\_  
Name

\_\_\_\_\_  
Contracting Agency

\_\_\_\_\_  
Federal Identification Number

\_\_\_\_\_  
Witness

BY \_\_\_\_\_

\_\_\_\_\_  
Witness

\_\_\_\_\_  
Name

**SECTION 00600 - PERFORMANCE BOND**  
**STATE PROJECT No. H.013125 (321)**

\_\_\_\_\_

\_\_\_\_\_

as Principal, and \_\_\_\_\_,  
a surety company or companies authorized to do business in Louisiana, as Surety, are bound, in solido, unto

\_\_\_\_\_

in the sum of

\_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_),  
payable in lawful money of the United States, in order to secure the full and faithful performance and timely  
completion of the project described below according to its plans and specifications, including, but not limited to the  
payment of stipulated damages as specified in the contract, and to this bond do obligate their heirs, successors and  
assigns. In the case of cosureties, the cosureties assume an obligation in the sum of

\_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_),

for \_\_\_\_\_ and

\_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_),

for \_\_\_\_\_

The consideration of this bond is such, that if the Principal shall perform this contract, made and entered into on the

\_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_,

to construct State Project No. \_\_\_\_\_

entitled \_\_\_\_\_

Parish \_\_\_\_\_, consisting of \_\_\_\_\_  
according to the stipulations in said contract attached hereto and made a part hereof, at the time and in the manner and  
form specified; perform all labor and work; and shall furnish all materials as specified in said contract, and the plans a  
specifications thereto attached and made a part thereof; this obligation shall be void; otherwise to remain in effect.

It is agreed by the parties that this bond is given in accordance with Louisiana Revised Statutes of 1950, Title 38,  
Chapter 10.



In faith whereof, we have subscribed this obligation at \_\_\_\_\_, Louisiana

Witness our hands and seals, this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_,

Witness

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_  
**Principal**

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

\_\_\_\_\_  
Type or Printed Name

\_\_\_\_\_  
**First Surety**

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

\_\_\_\_\_  
Attorney-in-Fact

\_\_\_\_\_  
Type or Printed Name

\_\_\_\_\_  
**Second Surety**

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

\_\_\_\_\_  
Attorney-in-Fact

\_\_\_\_\_  
Type or Printed Name

**SECTION 00605 - PAYMENT BOND**  
**STATE PROJECT No. H.013125 (321)**

\_\_\_\_\_

\_\_\_\_\_

as Principal, and \_\_\_\_\_,

a surety company or companies authorized to do business in Louisiana, as Surety, are bound, in solido, unto

\_\_\_\_\_

and unto all subcontractors, workmen and furnishers of materials and equipment, jointly in the sum of

\_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_),  
payable in lawful money of the United States, and to this bond do obligate their heirs, successors and assigns. In the  
case of cosureties, the cosureties assume an obligation in the sum of

\_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_),

for \_\_\_\_\_ and

\_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_),

for \_\_\_\_\_

The consideration of this bond is such, that if the Principal shall perform this contract, made and entered into on the  
\_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_,

to construct State Project No. \_\_\_\_\_

entitled \_\_\_\_\_

Parish \_\_\_\_\_, consisting of \_\_\_\_\_  
according to the stipulations in said contract attached hereto and made a part hereof, pay all sums due on materials and  
supplies used and for wages earned by workmen employed on the work; this obligation shall be void; otherwise to  
remain in effect.

It is agreed by the parties that this bond is given in accordance with Louisiana Revised Statutes of 1950, Title 38,  
Chapter 10.

In faith whereof, we have subscribed this obligation at \_\_\_\_\_, Louisiana

Witness our hands and seals, this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_,

Witness

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_  
**Principal**

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

\_\_\_\_\_  
Type or Printed Name

\_\_\_\_\_  
**First Surety**

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

Attorney-in-Fact

\_\_\_\_\_  
Type or Printed Name

\_\_\_\_\_  
**Second Surety**

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

Attorney-in-Fact

\_\_\_\_\_  
Type or Printed Name

**SECTION 00610 – REQUEST TO SUBLET**  
**STATE PROJECT No. H.013125 (321)**

*SUBMIT TO ENGINEER*

<b>Date</b>	
<b>Project Number</b>	
<b>Name of Project</b>	
<b>Parish</b>	

I desire to sublet the following items of work to the undersigned subcontractor:

<b>ITEM NO.</b>	<b>DOLLAR AMOUNT</b>	<b>ITEM NO</b>	<b>DOLLAR AMOUNT</b>

I, as contractor, understand and agree that the subcontractor shall not relieve me of my liability under the contract and bonds, and certify that the subcontractor has the experience, equipment and personnel to satisfactorily perform the subcontracted work, and that the subcontracted work is covered by a written agreement with the subcontractor.

<b>Contractor</b>	<b>Lic No</b>
<b>Address</b>	<b>Tax ID #</b>
<b>Phone</b>	<b>Facsimile No</b>
<b>Signature</b>	<b>e-mail</b>
<b>Name</b>	<b>Title</b>

I, as subcontractor, understand and agree that no part of the above listed subcontracted work shall be sublet; and I certify that the subcontracted work is covered by a written agreement with the contractor which states that the work shall be performed in accordance with the Contracting Agency construction contract for this project; and that the minimum wages stated in said contract shall be applied to the subcontracted work, if in fact minimum wages are stated in said contract.

<b>Subcontractor</b>	<b>Lic No</b>
<b>Address</b>	<b>Tax ID #</b>
<b>Phone</b>	<b>Facsimile No</b>
<b>Signature</b>	<b>e-mail</b>
<b>Name</b>	<b>Title</b>



# CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)  
Month/Date/Year

<b>PRODUCER</b>  Insurnce Agent/Broker Name Insurnce Agent/Broker Street Address or P.O. Box Insurnce Agent/Broker City, State & Zip Code Contact & Phone Number	<b>THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.</b>	
	<b>INSURERS AFFORDING COVERAGE</b>	<b>NAIC #</b>
<b>INSURED</b>  Vendor Name Vendor Street Address or P.O. Box Vendor City, State & Zip Code	INSURER A: Name of Insurance Company	Enter NAIC#
	INSURER B: Name of Insurance Company (if applicable)	Enter NAIC#
	INSURER C: Name of Insurance Company (if applicable)	Enter NAIC#
	INSURER D: Name of Insurance Company (if applicable)	Enter NAIC#
	INSURER E: Name of Insurance Company (if applicable)	Enter NAIC#

### COVERAGES

THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	ADD'L INSRD	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS	
A	<input type="checkbox"/>	<b>GENERAL LIABILITY</b> <input type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS MADE <input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> _____ <input type="checkbox"/> _____ GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input type="checkbox"/> PROJECT <input type="checkbox"/> LOC	Enter Policy #	Enter Effective Date	Enter Expiration Date	EACH OCCURENCE	\$
						DAMAGE TO RENTED PREMISES (Ea occurrence)	\$
						MED EXP (Any one person)	\$
						PERSONAL & ADV INJURY	\$
						GENERAL AGGREGATE	\$
						PRODUCTS - COMP/OP AGG	\$
							\$
A	<input type="checkbox"/>	<b>AUTOMOBILE LIABILITY</b> <input type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> HIRED AUTOS <input type="checkbox"/> NON-OWNED AUTOS <input type="checkbox"/> _____ <input type="checkbox"/> _____	Enter Policy #	Enter Effective Date	Enter Expiration Date	COMBINED SINGLE LIMIT (Each Occurrence)	\$
						BODILY INJURY (Per person)	\$
						BODILY INJURY (Per accident)	\$
						PROPERTY DAMAGE (Per accident)	\$
A	<input type="checkbox"/>	<b>GARAGE LIABILITY</b> <input type="checkbox"/> ANY AUTO <input type="checkbox"/> _____	Enter Policy # (if required)	Enter Effective Date	Enter Expiration Date	AUTO ONLY - EA ACCIDENT	\$
						OTHER THAN EA ACC	\$
						AUTO ONLY: AGG	\$
A	<input type="checkbox"/>	<b>EXCESS/UMBRELLA LIABILITY</b> <input type="checkbox"/> OCCUR <input type="checkbox"/> CLAIMS MADE <input type="checkbox"/> DEDUCTIBLE <input type="checkbox"/> RETENTION \$Enter Amount	Enter Policy # (if required)	Enter Effective Date	Enter Expiration Date	EACH OCCURENCE	\$
						AGGREGATE	\$
							\$
							\$
							\$
A	<input type="checkbox"/>	<b>WORKERS COMPENSATION AND EMPLOYERS' LIABILITY</b> ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? If yes, describe under SPECIAL PROVISIONS below	Enter Policy #	Enter Effective Date	Enter Expiration Date	<input type="checkbox"/> WC STATUTORY LIMITS <input type="checkbox"/> OTHER	
						E.L. EACH ACCIDENT	\$
						E.L. DISEASE - EA EMPLOYEE	\$
						E.L. DISEASE - POLICY LIMIT	\$
	<input type="checkbox"/>	<b>OTHER</b>					

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES / EXCLUSIONS ADDED BY ENDORSEMENT / SPECIAL PROVISIONS

--

<b>CERTIFICATE HOLDER</b>	<b>CANCELLATION</b>
	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE INSURER AFFORDING COVERAGE WILL ENDEAVOR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO DO SO SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER, ITS AGENTS OR REPRESENTATIVES.
	AUTHORIZED REPRESENTATIVE

## **IMPORTANT**

If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

## **DISCLAIMER**

The Certificate of Insurance on the reverse side of this form does not constitute a contract between the issuing insurer(s), authorized representative or producer, and the certificate holder, nor does it affirmatively or negatively amend, extend or alter the coverage afforded by the policies listed thereon.

**SECTION 00700 – SUPPLEMENTAL SPECIFICATIONS**

STATE PROJECT No. H.013125 (321)

**LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT  
PRIORITY PROGRAMS**

**STATEWIDE FLOOD CONTROL PROGRAM  
PORT CONSTRUCTION AND DEVELOPMENT PRIORITY PROGRAM  
SUPPLEMENTAL SPECIFICATIONS**

**PART I  
GENERAL PROVISIONS**

Part I, General Provisions, of the 2016 Standard Specifications is deleted and the 2018 General Provisions of the Louisiana Department of Transportation and Development Office of Multimodal Commerce is added.

**LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT  
OFFICE OF MULTIMODAL COMMERCE**

**GENERAL PROVISIONS  
2018**

Table of Contents

<b>1.</b>	<b>DEFINITIONS AND TERMS .....</b>	<b>4</b>
1.01	Voice/Mood and Reference .....	4
1.02	Acronyms and Abbreviations .....	4
1.03	Definitions of Terms .....	5
1.04	Understood Expressions .....	12
<b>2.</b>	<b>PROPOSAL PREPARATION &amp; BIDDING REQUIREMENTS.....</b>	<b>14</b>
2.01	Pre-qualification of Bidders .....	14
2.02	Contractors' Licensing Laws .....	14
2.03	Contents of Bidding Documents .....	14
2.04	Interpretation of Pay Items, Unit Prices, and Quantities in Schedule of Items .....	15
2.05	Examination Bid Documents and Site of Work .....	15
2.06	Preparation of Bid .....	16
2.07	Rejection of Proposals Containing Alterations, Erasures or Irregularities .....	16
2.08	Proposal Guaranty .....	16
2.09	Delivery and Opening of Proposals .....	17
2.10	Withdrawal of Proposals .....	17
2.11	Disqualification of Bidders .....	17
2.12	Right to Reject Bids .....	18
2.13	Irregular Proposals .....	18
2.14	Proposal / Bid Guaranty .....	18
2.15	Bid Withdrawal Consequences .....	18
<b>3.</b>	<b>AWARD AND EXECUTION OF CONTRACT .....</b>	<b>19</b>
3.01	Consideration of Bids .....	19
3.02	Rejection of All Bids .....	19
3.03	Award of Contract .....	19
3.04	Cancellation of Award .....	19
3.05	Return of Proposal Guaranty .....	19
3.06	Requirement of Payment and Performance Bonds .....	19
3.07	Execution and Approval of Contract .....	20
3.08	Failure to Execute Contract .....	20
3.09	Notice to Proceed .....	20
<b>4.</b>	<b>SCOPE OF WORK .....</b>	<b>21</b>
4.01	Intent of Contract .....	21
4.02	Alteration of the Contract .....	21
4.03	Maintenance of Traffic .....	24
4.04	Final Cleaning Up .....	24
4.05	Guarantee and Warranty of Contractor's Work .....	25
<b>5.</b>	<b>CONTROL OF WORK .....</b>	<b>27</b>



5.01	Authority of Engineer .....	27
5.02	Plans and Working Drawings .....	27
5.03	Conformity with Plans and Specifications .....	27
5.04	Coordination of Plans and Specifications.....	28
5.05	Cooperation by Contractor .....	28
5.06	Cooperation with Utilities .....	28
5.07	Cooperation Between Contractors .....	29
5.08	Construction Stakes, Lines and Grades .....	30
5.09	Authority and Duties of the Engineer .....	30
5.10	Duties of the Inspector .....	30
5.11	Inspection of Work .....	30
5.12	Inspector's Stamp for Shipment.....	31
5.13	Removal of Unacceptable and Unauthorized Work .....	31
5.14	Load Restrictions .....	32
5.15	Maintenance During Construction .....	32
5.16	Failure to Comply with Subsection 5.15 .....	32
5.17	Substantial Completion .....	32
5.18	Partial Utilization .....	33
5.19	Final Inspection .....	34
5.20	Final Application for Payment .....	34
5.21	Final Payment and Acceptance .....	34
5.22	Contractor's Continuing Obligation .....	35
5.23	Waiver of Claims .....	35
5.24	Claims for Additional Compensation .....	35
5.25	Suspension of the Work .....	38
<b>6.</b>	<b>CONTROL OF MATERIALS .....</b>	<b>40</b>
6.01	Source of Supply and Quality Requirements .....	40
6.02	Local Material Sources .....	40
6.03	Samples, Tests, Cited Specifications .....	41
6.04	Certificates .....	41
6.05	Contractor Quality Control .....	42
6.06	Plant Inspection .....	42
6.07	Foreign Materials .....	42
6.08	Material Storage and Plant Site .....	43
6.09	Handling Materials .....	43
6.10	Unacceptable Materials .....	43
6.11	Contracting Agency-Furnished Material .....	43
6.12	Misplaced Material .....	43
<b>7.</b>	<b>LEGAL RELATIONS AND RESPONSIBILITY TO THE PUBLIC .....</b>	<b>44</b>
7.01	Laws to be Observed .....	44
7.02	Permits, Licenses, Taxes and Insurance .....	44
7.03	Patented Devices, Materials and Processes .....	47
7.04	Sanitary, Health and Safety Provisions .....	47
7.05	Public Convenience and Safety .....	47
7.06	Railway-Highway Provisions .....	48
7.07	Navigable Waters and Wetlands .....	52
7.08	Barricades and Warning Signs .....	53
7.09	Use of Explosives .....	53
7.10	Preservation of Property, Landscape, and Survey Monuments .....	53
7.11	Forest Protection .....	54
7.12	Prevention of Soil Erosion and Water Pollution .....	54
7.13	Environmental Protection .....	54
7.14	Air Navigation .....	55

7.15	Hazard Zones .....	55
7.16	Damage Claims .....	55
7.17	Contractor's Responsibility for Work .....	55
7.18	Utility Property and Services .....	56
7.19	Furnishing Right-of-Way .....	56
7.20	Personnel Liability of Public Officials .....	56
7.21	No Waiver of Legal Rights .....	56
7.22	Third Party Liability .....	56
7.23	Antitrust Violations .....	56
7.24	Archeological and Historical Findings .....	56
<b>8.</b>	<b>PROSECUTION AND PROGRESS.....</b>	<b>58</b>
8.01	Subletting of Contract .....	58
8.02	Commencement of Work .....	58
8.03	Construction Progress Schedule .....	58
8.04	Prosecution of Work .....	58
8.05	Limitation of Operations .....	59
8.06	Labor, Methods and Equipment .....	59
8.07	Determination and Extension of Contract Time .....	60
8.08	Failure to Complete on Time .....	61
8.09	Default and Termination of Contract .....	62
8.10	Termination of Contractor's Responsibility .....	63
8.11	Termination of Contract .....	63
8.12	Termination of Contract for Convenience .....	64
<b>9.</b>	<b>WARRANTY AND GUARANTEE.....</b>	<b>65</b>
9.01	One Year Correction Period .....	65
<b>10.</b>	<b>MEASUREMENT AND PAYMENT .....</b>	<b>66</b>
10.01	Measurement of Quantities .....	66
10.02	Scope of Payment .....	67
10.03	Compensation for Altered Quantities .....	67
10.04	Compensation for Alterations of the Contract .....	68
10.05	Eliminated Items .....	70
10.06	Partial Payments .....	70
10.07	Payment for Stockpiled or Stored Material .....	71
10.08	Adjustment for Changes in Common Carrier Rates .....	72
10.09	Acceptance and Final Payment .....	73

## 1. DEFINITIONS AND TERMS

**1.01 Voice/Mood and Reference:** This specification book uses the active voice, imperative mood when describing the contractor's responsibility. For example:

**101.01.1 Active Voice/Imperative Mood:** Provide competent supervision.

The subject of a sentence written in the active voice/imperative mood is not explicitly stated. In these specifications, the implied subject of such a sentence is typically the contractor, although in certain situations, the subject may also be a vendor, fabricator, or manufacturer engaged by the contractor to supply material, products, or equipment for use on the project. Prior to award of a contract, the imperative statements are directed to the bidder; it is only after the contract has been awarded that the imperatives are directed to the contractor.

Section and Subsection titles, and headings provide reference only, not interpretation.

A cross-reference to a specific Subsection of these specifications include all general requirements of the Section of which the Subsection is a part.

Unless specified by year or date, cited publications refer to the most recent issue, including interim publications, in effect on the first date of advertisement for bids.

**1.02 Acronyms and Abbreviations:** Wherever the following abbreviations are used in these specifications, project specifications, or the plans, they are to be construed to be the same as the respective expressions represented:

AA	Aluminum Association
AAN	American Association of Nurserymen
AAR	Association of American Railroads
AASHTO	American Association of State Highway and Transportation Officials
ACI	American Concrete Institute
AGC	Associated General Contractors of America
AGMA	American Gear Manufacturers Association
AIA	American Institute of Architects
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AML	Approved Materials List (DOTD)
ANSI	American National Standards Institute
API	American Petroleum Institute
ARA	American Railway Association
AREAMA	American Railway Engineering Association and Maintenance Association
ASCE	American Society of Civil Engineers
ASLA	American Society of Landscape Architects
ASTM	American Society for Testing and Materials
AWG	American Wire Gauge
AWPA	American Wood Preservers Association
AWWA	American Water Works Association
AWS	American Welding Society
CPM	Critical Path Method
COE	U.S. Army Corps of Engineers
DBE	Disadvantaged Business Enterprise
DEQ	Department of Environmental Quality (Louisiana)
DOTD	Department of Transportation and Development (Louisiana)
EDSM	Department's Engineering Directives and Standards Manual
EPA	Environmental Protection Agency
FAA	Federal Aviation Administration, Department of Transportation

FHWA	Federal Highway Administration, Department of Transportation
FSS	Federal Specifications and Standards, General Services Administration
ICC	Interstate Commerce Commission
ICEA	Insulated Cable Engineers Association
IMSA	International Municipal Signal Association
IRI	International Roughness Index
ISO	International Organization for Standardization
ITE	Institute of Transportation Engineers
LAPELS	Louisiana Professional Engineering and Land Surveying Board
LRS	Louisiana Revised Statutes
LSSRB	Louisiana Standard Specifications for Roads and Bridges
LTRC	Louisiana Transportation Research Center
MIL	Military Specifications
MASH	Manual for Assessing Safety Hardware
MUTCD	Manual on Uniform Traffic Control Devices (Louisiana)
NCHRP	National Cooperative Highway Research Program
NEC	National Electrical Code
NEMA	National Electric Manufacturers Association
NFPA	National Fire Protection Association
OSHA	Occupational Safety and Health Administration
PCCP	Portland Cement Concrete Pavement
QC/QA	Quality Control/Quality Assurance
RMA	Rubber Manufacturers Association
SAE	Society of Automotive Engineers
SI	Système Internationale or International System of Units
SCS	U.S. Soil Conservation Service. See NRCS.
SSPC	Steel Structures Painting Council
STB	Surface Transportation Board
TIMED	Transportation Infrastructure Model for Economic Development
UL	Underwriters Laboratories, Inc.

**1.03 Definitions of Terms:** Wherever the following terms appear in the plans, project specifications or other contract documents, they shall be defined as follows:

- a. **Acts of God:** A cataclysmic phenomenon such as an earthquake, tidal wave, tornado, hurricane, or any other occurrence of nature beyond the control of the Contracting Agency and contractor when the project is in a geographic area that has been declared by the government as a disaster area.
- b. **Adjustment:** A change in contract time or compensation provided in accordance with Subsections 8.07 and 10.04
- c. **Advertisement:** A public announcement inviting bids containing the location and description of the work, time and place of opening bids.
- d. **Assembly Period:** Time the Contractor is given to acquire approvals of required drawings, brochures and other submittals, and to begin the purchase and assembly of materials, and to perform specified preconstruction activities. Contract time will not be charged during an assembly period
- e. **Award of Contract:** Official written notice to the Contractor that the Contracting Agency has accepted the Contractor's proposal.

- f. **Base Course:** The layer or layers of specified material of designed thickness constructed on the subgrade to support a surface course.
- g. **Bid:** The binding offer of a responsible bidder that was submitted to the Contracting Agency on the bid forms, or via approved electronic media, in accordance with the bidding documents
- h. **Bid Forms:** The portion of the bidding documents required to be submitted, in accordance with the bidding documents, in order to constitute a bid.
- i. **Bidder:** An individual, partnership, firm, corporation, or any acceptable combination thereof, or joint venture submitting a proposal.
- j. **Bidding Documents:** The advertisement, plans, specifications, bid forms, bidding instructions, addenda, special provisions, and all other written instruments prepared by or on behalf of the Contracting Agency for use by bidders.
- k. **Bond, Bid:** The security designated in the Proposal to be furnished by the bidder as evidence of good faith to enter into a contract with the Contracting Agency if such contract be awarded to such bidder.
- l. **Bond, Payment:** The approved form of security furnished by the Contractor and his surety as security for the faithful payment for all labor, materials, or other obligations incurred by him in the prosecution thereof.
- m. **Bond, Performance:** The approved form of security furnished by the Contractor and his surety as security for the faithful performance of the work by him in the prosecution thereof.
- n. **Bridge:** A structure, including supports, erected over a depression or an obstruction, such as water, highway, or railway, which has a track or passageway for carrying traffic or other moving loads, and having an opening measured along the center of the roadway of more than 20 feet between undercopings of abutments, spring lines of arches, or extreme ends of openings for multiple boxes. A bridge may include multiple pipes where the clear distance between openings is less than ½ the smaller contiguous opening.  
**Bridge Length:** The greater dimension of a structure measured along the center of the roadway between backs of abutment backwalls or between ends of bridge floor.  
**Bridge Roadway Width:** The clear width of structure measured at right angles to the center of the roadway between the bottom of curbs or if curbs are not used, between the inner faces of parapet or railing.
- o. **Calendar Day:** Every day on the calendar, beginning and ending at midnight.
- p. **Change Order (Plan Change) or Special Agreement:** The standard form normally used to describe and detail changes to the contract. When approved and fully executed, the document becomes a part of the contract.
- q. **Commissioner:** The Commissioner of Multimodal Commerce of the Louisiana Department of Transportation and Development.
- r. **Conditional Notice to Proceed:** Written notice to the contractor to proceed with ordering

of materials, and when specified, performing other activities which would hinder progress in the beginning stages of construction.

s. **Construction Proposal:** Document furnished to prospective bidders by the Contracting Agency consisting of, but not limited to, the notice to contractors, special provision, supplemental specifications, and bid forms.

t. **Contract:** The written agreement between the Contracting Agency and the Contractor setting forth obligations of the parties there under for performance of the prescribed work.

The contract includes the notice to contractors, proposal, contract form, payment and performance bonds, general provisions, supplemental specifications, special provisions, specifications, general and detailed plans; also, any plan changes and supplemental agreements that are required to complete the work in an acceptable manner, including authorized extensions thereof, all of which constitute one instrument.

u. **Contracting Agency:** Any affected City, Town, Village, Levee Board, Police Jury, or other governing authority of any Parish, State Department, State Agency, Board, Commission, Public Corporation, or any other political subdivision of the State of Louisiana, in whose name the contract will be executed. The Contracting Agency will be further defined in the Notice to Contractors.

v. **Contract Item (Pay Item):** A specific unit of work for which a price is provided in the contract.

w. **Contract Modification:** See Plan Change or Change Order

x. **Contractor:** The individual, partnership, firm, corporation or any acceptable combination thereof, or joint venture entering into a contract duly awarded for performance of prescribed work.

y. **Contract Time:** The number of working days or calendar days allowed for completion of the contract, including authorized time extensions. When a calendar date of completion is shown in the contract in lieu of a number of working or calendar days, work shall be completed by that date.

z. **Controlled Access Highway:** Any highway to or from which access is denied or controlled from or to abutting land or intersecting streets, roads, highways, alley, or other public or private ways.

aa. **Controlling Item(s) of Work:** Item(s) of work that should be in progress at the time, essential to the orderly completion of the work within the time limit specified, in accordance with the contractor's approved construction progress schedule.

bb. **Control of Access:** The condition where the right of owners or occupants of abutting land or other persons to access, light, air, or view in connection with a highway is controlled by public authority.

-Full Control: Preference is given to through traffic by providing access connections with selected public roads only, and by prohibiting crossing at grade or direct driveway connections.

-Partial Control: Preference is given to through traffic to a degree that, in addition to access connections with selected public roads, there may be some crossings at grade, and some private driveway connections.

- cc. Critical Path Method (CPM):** The method of network scheduling that utilizes computer programs to (i) arrange the sequence of project activities based on activity relationships and durations, (ii) show early and late activity start and completion dates, (iii) determines the longest continuous sequence of activities, the critical path, that establishes the minimum overall project duration and identifies the activities on that path, and (iv) facilitate allocation of resources and estimates of contract earnings.
- dd. Culvert:** Any drainage structure under a roadway or other facility not defined as a bridge.
- ee. Dedicated Stockpile:** A stockpile assembled for a specific project.
- ff. Department:** The Louisiana Department of Transportation and Development, Office of Multimodal Commerce.
- gg. Department of Transportation and Development:** The Louisiana Department Transportation and Development, through its offices and officers, responsible for developing and implementing programs to ensure adequate, safe, and efficient transportation, and other public works facilities and services in the state in accordance with Chapter 11 of LRS Title 36 as amended.
- hh. Disadvantaged Business Enterprise (DBE):** A DBE is a for-profit small business concern that is at least 51 percent independently owned and controlled, in both substance and form, by one or more individuals who are both socially and economically disadvantaged and participating in the DBE Program mandated by the U.S. Department of Transportation Financial Assistance Programs.
- ii. Electronic Bid Bond:** An instrument by which a contractor and surety can submit a bid guarantee with a bid electronically in lieu of a written signed paper.
- jj. Electronic Bidding:** The process by the Contracting Agency and the bidder can utilize the Internet to facilitate the bidding process.
- kk. Electronic Signature:** A secure and verifiable alpha-numeric code assigned to an individual, replacing or acting instead of a traditional signature.
- ll. Engineer of Record (EOR):** The person or firm licensed to practice engineering in Louisiana and employed by the Contracting Agency for the professional quality, technical accuracy, and coordination of all designs, drawings, specifications, and other engineering services necessary to develop the criteria and concept of the project, perform design analysis, prepare project plans and specifications, and who seals, signs, and dates the plans and documents certifying that the work thereon was done by the licensee or under his/her responsible charge and/or administer the construction contract. The person or firm named as stated in the Notice to Contractors.
- mm. Equipment:** All machinery, implements and power-tools, together with the necessary supplies for the operation, upkeep and maintenance of the same and also all other tools and apparatus necessary for the proper construction and acceptable completion of the work.

- nn. Extra Work:** Work not provided for in the contract as awarded but found essential by the Contracting Agency for satisfactory completion of the contract within its intended scope.
- oo. Extension of Contract Time:** Any extension of the time for completion of work beyond the contract time specified in the contract for an item not provided for in the contract as awarded but found essential by the contracting agency for satisfactory completion of the contract within its intended scope. Such extension being granted by the Contracting Agency upon recommendation of the Engineer.
- pp. Falsework:** temporary construction work on which a main work is wholly or partly built and supported until it is strong enough to support itself; a temporary framework used to support part or all of a structure during demolition.
- qq. Fresh Concrete:** Concrete in the plastic state before achieving initial set.
- rr. Highway, Street, or Road:** A public way for vehicular travel, including the entire area within the right-of-way.
- ss. Incidental Work:** Work required by the contract that is not directly measured and for which no specific pay item is provided, including all work necessary to satisfactorily complete all pay items.
- tt. Inspector:** An authorized representative of the Engineer assigned to make any and all inspections of the work performed and materials furnished by the Contractor.
- uu. Invitation for Bids:** See “Advertisement.”
- vv. Item:** See “Pay Item.”
- ww. Laboratory:** The official testing laboratories as designated by the Engineer.
- xx. Local Street or Local Road:** A street or road not in the state maintained system.
- yy. Major Item:** A pay item included in the contract with a total cost equal to or greater than 10 percent of the original total contract amount.
- zz. Materials:** Any substance used in the work.
- aaa. Median:** The portion of a highway separating traveled ways for traffic in opposite directions.
- bbb. Minor Item:** A pay item included in the contract as awarded with a total cost of less than 10 percent of the original total contract amount.
- ccc. Notice to Contractors:** The advertisement for bids for all work on materials on which bids are required. Such advertisements will indicate the location and description of the work, and time and place of opening bid proposals.
- ddd. Notice to Proceed:** Written notice to the contractor to proceed with the contract work which will stipulate the dates that work shall commence and contract time shall begin.
- eee. Parish:** A political subdivision corresponding to a county in other states.



- fff. Pavement Structure:** The combination of base courses and surface course placed on a subgrade across the roadbed.
- ggg. Plan Change / Contract Modification:** A written agreement signed by the Contractor and the Contracting Agency, as recommended by the Engineer, involving changes or additional work within the provisions of the contract and not considered of sufficient importance to require a “Supplemental Agreement”. Also see “Change Order”.
- hhh. Plans:** The approved plans, profiles, typical cross-sections, general cross-sections, working drawings and supplemental drawings, or exact reproductions thereof, prepared or designated by the Engineer, which show the locations, character, dimensions and details of the work to be done, and which are to be considered as a part of the contract together with these specifications.
- iii. Proposal:** The offer of a bidder, on the prescribed form, to perform the stated work and to furnish the labor and materials at the prices quoted. Also see “Bid”.
- jjj. Proposal Form:** The prescribed form on which the offer of a bidder shall be submitted. Also see “Bid Forms”.
- kkk. Proposal Security or Guarantee:** The security designated in the Proposal to be furnished by the bidder as evidence of good faith to enter into a contract with the Contracting Agency if such contract be awarded to such bidder.
- lll. Quality Assurance:** The combined efforts of quality control and acceptance processes to ensure that a project adheres to the contract requirements.  
 -Quality Control is the process used by the contractor to monitor, assess, and adjust material selection, production, and project construction to control the level of quality so that his product continuously and uniformly conforms to specifications.  
 -Acceptance is the process of sampling, testing and inspection to determine the degree of compliance with the specifications for acceptance of materials and/or the contractor’s work.
- mmm. Right-of-Way, Servitude and/or Easements:** Land, property or interest therein, acquired for or devoted to the intent and purpose of the project.
- nnn. Roadbed:** The graded portion of a roadway prepared as a foundation for the pavement structure within the top of the side slopes, including the shoulder.
- ooo. Roadside:** The area adjoining the outer edge of the roadbed. Extensive areas between roadways of a divided highway may also be considered roadside.
- ppp. Secretary:** The Secretary for the Louisiana Department of Transportation and Development.
- qqq. Service Road or Frontage Road:** A street or road on the side of the mainline roadway for service to abutting property and adjacent areas, and for control of access.
- rrr. Small Business Enterprise (SBE):** As defined by Section 3 of the U.S. Small Business Act and S.B.A. regulations, a for-profit business that is at least 51 percent owned by one

or more individuals who are economically disadvantaged, and whose company is a small business concern in accordance with 49 C.F.R. 26.65.

- sss. Special Condition or Special Provision:** The part of the Contract which emphasizes, specifies or advises the Contractor of special items or circumstances particular to the project which amends or supplements the General Conditions, special provisions and Supplemental Specifications.
- ttt. Specialty Item:** A pay item designated in the contract that may be performed by subcontract and the cost of such may be deducted from the total contract cost before computing the amount of work required to be performed by the contractor with the contractor's own organization.
- uuu. Specifications:** The directions, provisions and requirements contained in the Contract Documents that describe the work under the Contract. The specifications are further defined as follows:
- Standard Specifications: The "Louisiana Standard Specifications for Roads and Bridges" a bound book or electronic media, applicable to all contracts.
  - Supplemental Specifications: Additions and revisions to the Standard Specifications.
  - Special Provisions: Specific requirements that amend the Standard Specifications or supplemental specifications, applicable to a specific project.
  - Non-Standard Special Provision: A specification that describes requirements for an unusual item or one that should not be part of the Standard Specifications.
  - Technical Special Provisions: Specifications, of a unique or highly technical nature, prepared, signed, and sealed by an Engineer or Architect registered in the State of Louisiana with recognized expertise in the field, that are made part of the Contract as an attachment to the Contract Documents.
  - Project Specifications: All Standard Specifications, Supplemental Specifications, Special Provisions and other provisions applicable to the project.
- vvv. Specified:** Required or stipulated in the contract documents
- www. Standard Plans:** Louisiana Department of Transportation and Development drawings approved for repetitive use, showing the details to be used where appropriate.
- xxx. State:** The State of Louisiana, acting through its authorized representative.
- yyy. Storm Drain:** A fully contained and connected set of drainage structures, which capture the rain water runoff.
- zzz. Structures:** Bridges, tunnels, culverts, catch basins, junction boxes, headwalls, retaining walls, cribbing, manholes, end-walls, dams, floodgates, buildings, docks, etc. and other miscellaneous construction which may be encountered in the work and not otherwise classified herein.
- aaaa. Sub-contractor:** An individual, partnership, corporation, joint venture, other legal entity or acceptable combination thereof, to which the contractor sublets part of the work. Any individual, partnership, corporation, joint venture, other legal entity or acceptable combination thereof shall not be considered to be a subcontractor if it is a subsidiary, wholly owned or majority owned by the contractor or the principals of the contractor, or an affiliate of the contractor or affiliated or otherwise controlled by the contractor or the

principals of the contractor such that a true and independent subcontractor-contractor relationship reached by bidding or arms-length negotiation does not result there from.

- bbbb. Submittals:** Detailed drawings and documents provided by the contractor as required by the contract.
- cccc. Superintendent:** The Contractor's authorized representative in responsible charge of the work.
- dddd. Surety:** The corporation, partnership or individual, other than the Contractor, executing a bond furnished by the Contractor.
- eeee. Temporary Works:** Any temporary structure or any stream crossing required to maintain traffic while engaged in the prosecution of the contract. The temporary structures shall include the earth approaches thereto.
- ffff. Technician:** The contractor's or the engineer's representative who shall be either certified or authorized as required in the specifications.
- gggg. Unit:** A quantity adopted as a standard for measurement of work.
- hhhh. Work:** The furnishing of labor, materials, services, equipment, and incidentals necessary for successful completion of the project and the carrying out of all obligations imposed by the contract.
- iiii. Work Order:** See Notice to Proceed:
- jjjj. Working Day:** A calendar day on which weather or other conditions not under control of the contractor will permit construction operations to proceed in accordance with Subsection 8.07
- kkkk. Working Drawings:** Drawings produced and submitted by the contractor to the engineer in accordance with 5.02 that describe the contractor's work, means, and/or methods of construction, including, for example, supplemental design sheets, shop drawings, bending diagrams, and construction joint locations.

- 1.04 Understood Expressions:** Where the party responsible for the work, testing, or sampling described is not specifically identified, the work is to be performed by the contractor.

In order to avoid cumbersome repetition of expressions in the contract or plans, it is provided that whenever anything is, or is to be done, if, as, or, when or where "contemplated, required, determined, directed, authorized, ordered, given, designated, indicated, considered necessary, deemed necessary, permitted, reserved, suspended, established, approval, approved, disapproved, acceptable, unacceptable, suitable, accepted, satisfactory, unsatisfactory, sufficient, insufficient, rejected, condemned, waived, or written consent," it shall be understood as if the expression were followed by the words "by the engineer" or to the engineer".

Whenever the contract or plans contain the expressions "no direct pay, no direct payment, not measured for payment, at no additional cost or expense to the Contracting Agency, will not be measured for payment, considered incidental to other items of work, no payment will be made for this work, shall not be entitled to extra payment," or any variation of one of these expressions it shall be understood by the bidder that the

designated work is to be considered incidental work and the cost of such work shall be included in the price bid on other pay items.

When plans, including “as-built” plans from previous projects, specifications, plans notes, general notes, special or supplemental provisions, or other bid or contract documents provide information or data with a notation indicating that the information or data is provided “For Information Purposes” or “For Information Purposes Only,” the Contracting Agency provides such information, representations, or data only for illustrative purposes.

## 2. PROPOSAL PREPARATION & BIDDING REQUIREMENTS

**2.01 Pre-qualification of Bidders:** To qualify for submission of a bid, the bidder shall comply with all rules and regulations of the Louisiana State Licensing Board for Contractors.

**2.02 Contractors' Licensing Laws:** Attention is directed to the rules and regulations of the State Licensing Board for Contractors. Information relative to licensing may be obtained from the offices of said Board in Baton Rouge.

If the estimated project cost is \$50,000 or more, only licensed Contractors may receive bid forms, unless federal funds are involved. When federal funds are involved, non-licensed Contractors may receive bid forms and submit bids; however, if the Contractor's bid is \$50,000 or more, the successful non-licensed bidder will be required to obtain the proper license before beginning work under the contract.

When the estimated project cost is greater than \$50,000, the Contractor shall show his license number on the bid envelope unless the contractor submits the bid via approved electronic bidding process. If the subcontract amount is \$50,000 or more, both the Contractor and Subcontractor are subject to rules and regulations of the State Licensing Board for Contractors.

When landscaping is the predominant work on the project and no federal funds are involved, prior to receiving bid forms, the prospective bidder will be required to possess a current Landscape Contractors license from the horticulture Commission of the Louisiana Department of Agriculture and Forestry.

The contractor will be required to ensure all work performed conforms to Louisiana licensing laws and permit requirements.

**2.03 Contents of Bidding Documents:** Upon request, the prospective bidders will be furnished with bidding documents by the Engineer. The construction proposal will state the location and description of the contemplated work, will show the approximate estimate of the quantities and kinds of work to be performed, and will include the bid forms to be completed and returned by the bidder. The proposal will state the time in which the work must be completed, the amount of the proposal guaranty, and the date, time and place of opening proposals. The proposal will also include any supplemental specifications, special provisions, or requirements, which vary from or are not contained in the Standard Specifications. The plans, specifications and other documents designated in the proposal form will be considered a part of the proposal whether attached or not.

The prospective bidder will be required to pay the Engineer the sum stated in the Notice to Contractors for each set of plans, if so stated. The prospective bidder may use the approved electronic bidding process. The use of such services may require payment by the contractor of additional fees to the service provider. Unless the contractor properly submits the bid forms electronically, the bid forms bound with or attached to the construction proposal should be detached, completed, and returned by the bidder.

Unless explicitly stated otherwise in the contract, when the name of a certain brand, make, manufacture, or definite specifications limit the product or source to supplied under or pursuant to a specification in this contract to a single product or source, that specification shall not restrict bidders to the specified brand, make, manufacture, product or source, but to set forth and convey to prospective bidders the general style, type, character, quality and salient performance criteria desired by the Engineer of the product or source specified. The specified product or source shall be a standard by which substitute products or sources will be compared to determine if the substitute product or source will be approved for substitution as equal to or superior to the general style, type, character, quality and salient performance criteria of the product or source specified. Bidders are informed that substitute products or sources shall be submitted to the Engineer for prior approval

no later than seven working day prior to the opening of bids in accordance with LRS 38:2295(C). The Engineer will approve or deny substitution of the product or source specified within three days, exclusive of holidays and weekends. If a product or source sought to be used as a substitute for the product or source specified is not submitted prior to the opening of bids as provided in LRS 38:2295(C), the Engineer has the right to require the product or source specified. Substitution of a product or source submitted in substitution of the product or source specified after the seven-day period prior to the opening of bids may only be allowed after that time in the Engineer's sole discretion pursuant to 5.01.

**2.04 Interpretation of Pay Items, Unit Prices, and Quantities in Schedule of Items:** The quantities listed in the proposal form are to be considered as approximate and are to be used only for the comparison of bids. Payment to the Contractor will be made only for the actual quantities of work performed and material furnished in accordance with the contract, and if upon completion of construction the actual quantities show either increase or decrease from the quantities given in the approximate estimate, the unit bid prices mentioned in the proposal will still prevail, except as otherwise herein provided. Nothing in the proposal, or anywhere else in the contract, is intended to amend, prohibit, or release the contractor from performance of the work specified in the plans and specifications for which no direct pay item is included (i.e., without compensation), in addition to that in the Schedule of Items. The contract unit price for a scheduled item shall include all direct costs, all overhead, any profit, and all indirect, incidental, and subsidiary costs, necessary to complete the item, and any incidental work not measured for payment as described under the individual pay items listed in the Schedule of Items. The contractor shall perform all work required to complete the project.

**2.05 Examination Bid Documents and Site of Work:** The bidder is required to examine carefully the site of the proposed work, proposal, plans, specifications, and contract and bond forms for the work contemplated and it will be assumed that he has investigated and satisfied himself as to the conditions to be encountered and as to the character, quality and quantities of work to be performed, and materials to be furnished, and as to the requirements of these specifications, special provisions and contract. Bidders are assumed to have made themselves familiar with all Federal and State laws, local laws, ordinances and regulations which in any manner affect the work or its prosecution. The intent of the Contract is to provide an equitable basic of payment for the actual work performed, in accordance with the Contract. Total payment to the Contractor will be determined by multiplying the quantities of work completed, in accordance with the Contract and as determined by the Engineer, by the applicable unit price for the pay item as show on the schedule of items. Lump sum items will be considered to have a quantity of one. Payment shall equal the summation of the individual pay item extension.

Written instructions necessary to use the electronic bidding service and prepare and submit a bid electronically are provided by the bidding service website. Fees payable to the bidding service may be required of the contractor to use the service and to establish electronic signatures. The contractor is advised to timely make all necessary arrangements with the bidding service and to familiarize himself with the system and process requirements prior to using the service to submit a bid.

If after review of the plans, specifications and site of the proposed work. The bidder believes that work will be required but there is no logical pay item for the work, then the bidder will notify the Engineer in writing at least seven days prior to opening of the bids so that the Engineer may determine if an addendum is required. The bidder's notification shall contain a description of the work that is required, suggested pay item and an explanation why the bidder believes the required work is not included in one of the items of work on the schedule of items. The filing of a bid shall be presumptive evidence that the bidder has complied with these requirements.

Any subsurface tests and boring data which have been compiled by the Contracting Agency and furnished to the bidder shall not be considered as fully representative of subsurface conditions existing throughout the area tested nor shall they in any way be binding upon the Contracting Agency.

By submitting a bid, the bidder represents and warrants that bidder has carefully and thoroughly reviewed and examined all bid documents, including all project plans and specifications; and examined and inspected the project site for the purpose of identifying, assessing, and determining all observable or apparent site conditions that may have an impact on the performance of the work.

By submitting a bid, the bidder further represents and warrants that (1) review and examination of the bid documents, including all project plans and specifications, has not revealed or otherwise indicated, and bidder is otherwise unaware of, any error, omission, ambiguity or deficiency of any kind in any of the bid documents or the information reflected by the bid documents; (2) examination and inspection of the project site has not revealed or otherwise indicated, and bidder is otherwise unaware of, any apparent or otherwise observable site condition that may have an impact on the performance of the work; and (3) that Bidder has provided to the Contracting Agency written notice identifying and detailing any site condition or error, omission, ambiguity or deficiency of any kind in any of the bid documents or the information reflected by the bid documents that may have a significant impact on the performance of the project, including the cost of the project or the time required to complete the work.

- 2.06 Preparation of Bid:** Bids shall be submitted on bid forms provided by the Engineer or accessed online through a bidding service. If submitting a paper bid, the bidder must record his bid in ink and the unit prices shall be stated in figures and only in figures on the “Louisiana Uniform Public Work Bid Form **Unit Price Form**”. The total bid amount in words and figures must be written in the proper places provided for on the “Louisiana Uniform Public Work Bid Form”. In the case of a discrepancy, the “Louisiana Uniform Public Work Bid Form **Unit Price Form**” for unit price will govern. The actual low bidder will be verified by multiplying the quantities and unit on the “Louisiana Uniform Public Work Bid Form Unit Price Form” to establish the total.

The bidder is required to examine carefully the proposal form before submitting same, in order to see that a unit price is submitted on each and every item for which a bid is requested.

The bidder will be responsible for all errors or omissions in his proposals. The bidder shall sign his proposal correctly. Proposals must be signed either with an authorized electronic signature or in ink. If the proposal is made by an individual, his name and address must be shown. If made by a corporation, partnership, or other entity the name and position or title of the individual signing the proposal must be shown. A resolution authorizing the signature should be attached to the proposal except as set forth on the form.

- 2.07 Rejection of Proposals Containing Alterations, Erasures or Irregularities:** Proposals may be rejected if they show an alteration of form, additions not called for, conditional or unauthorized alternate bids, incomplete bids, erasures, or irregularities of any kind. If not accompanied by a proposal guaranty, proposals will be rejected, unless said is not required.

- 2.08 Proposal Guaranty:** The proposal will be rejected unless bid guaranty in the required amount is received at the address designated for receiving bids prior to the closing time fixed in the bid invitation, except that security received after such fixed time will be treated in the same manner as late bids.

The bidder, at his option, may furnish a bid bond, postal money order, certified check, or cashier’s check, as security in the amount required. In case security is in the form of a postal money order, certified check, or cashier’s check, the Contracting Agency may make such disposition of the same as will accomplish the purpose for which submitted.

The following conditions shall be met:

- a. Bidders shall attach a certified check, cashier’s check, or bid bond for five percent of the contract price of work to be done as evidence of good faith of the bidder.

- b. If bid bond is used, it shall be written by a surety or insurance company currently on the U.S. Department of Treasury Financial Management Service list of approved bonding companies to write Bonds in Louisiana. Said list is published annually in the Federal Register.
- c. All signatures required on the bid bond may be original, mechanical reproductions, facsimiles or electronic.
- d. If a bid bond is used, it shall be written on the form provided herein and shall be executed and completed so as to comply with all terms, conditions and instructions set forth on said form.
- e. If bidding through an online service the contractor is responsible for investigating and complying with electronic bid bond submission with and through the service.

**2.09 Delivery and Opening of Proposals:** Unless delivered electronically through the approved electronic bid submission service, each proposal shall be submitted, together with the proposal guaranty, in a properly addressed, sealed and labeled envelope. If submitted by mail, the envelope shall be addressed to the Contracting Agency at the address given in the “Notice to Contractors”, and should preferably be registered. If submitted otherwise than by mail, it shall be delivered to the proper place designated in the “Notice to Contractors”. Bids submitted any other way will be considered informal. Proposals will be received up to the time stated and must be delivered to the contracting agency at the designated place before the expiration of the time stipulated for the receipt of bids. Proposals received after the stipulated time will be returned to the bidder unopened. Electronic bids transmitted by the bidder after the time set for bid opening will not be accepted.

Proposals, whether electronic or paper, will be opened and read publicly at the time and place indicated in the “Notice to Contractors”. Bidders or their authorized agents are invited to be present.

**2.10 Withdrawal of Proposals:** A bidder may withdraw his proposal provided the request is made in writing and is received by the Contracting Agency within forty-eight hours of the bid opening excluding Saturdays, Sundays, and legal holidays. The withdrawal of the bid shall not prejudice the right of a bidder to file a new bid. Electronic bids submitted using the bid service may be withdrawn prior to the specified bid opening time by the authorized bidder. The withdrawal of proposals will be in accordance with the following:

- a. A mistake was in fact made in preparation of the bid; and,
- b. The mistake in the bid is of a mechanical, clerical or mathematical nature and not one of bad judgment, careless inspection of the work site, or in reading the plans and specifications; and,
- c. The mistake is found to be in good faith and was not deliberate or by reason of gross negligence; and,
- d. The mistake is patently obvious on the face of the bid; and,
- e. The mistake, request for withdrawal of the bid by reason of the mistake, and written evidence of the mistake, is delivered to the Contracting Agency within 48 hours excluding Saturdays, Sundays, and legal holidays. The written evidence of the mistake supplied to the Contracting Agency shall be duly sworn before a Notary Public as original, unaltered documents used in the preparation of the bid or any other facts relevant to the bidder’s request to withdraw the bid as evidence of the existence of a mistake; and,
- f. The sworn, written evidence furnished to the Contracting Agency within 48 hours excluding Saturdays, Sundays, and legal holidays, constitutes clear and convincing evidence of the bidder’s mistake.

**2.11 Disqualification of Bidders:** If more than one proposal is submitted by an individual, firm or partnership, corporation or association, under the same or different names, all proposals so submitted shall be considered irregular and shall be rejected. Reasonable ground for believing that any bidder had an interest in more than one proposal for the work contemplated will cause the rejection of all proposals in which such bidder has an interest. Any or all proposals will be rejected if there is reason for believing that collusion exists among the bidders and all participants in such collusion will not be considered in future proposals for the same work. Unbalanced proposals may be rejected. No contract will be awarded except to responsible bidders capable



of performing the class of work contemplated, and having sufficient equipment, financial resources and experience to properly perform such work.

In the event of failure or refusal on the part of the bidder to whom the award is made to execute the contract and furnish satisfactory bond within ten (10) days after such contract and bonds are submitted to said successful bidder for execution, the right is reserved by the Contracting Agency to annul the award and to award the contract to the next lowest bidder, or advertise for new proposals, or reject all bids. In the event the bidder to whom the award is made fails or refuses to execute the contract and furnish satisfactory bonds within the ten (10) days above specified, the "Proposal Security" accompanying his bid shall become the property of the contracting agency.

**2.12 Right to Reject Bids:** Until the final award of the contract is made, the right is reserved to reject any and all proposals.

**2.13 Irregular Proposals:** Proposals will be considered irregular and will be rejected for any of the following conditions:

- a. If the proposal is on a form other than that furnished by the Contracting Agency or by the bidding service, or if the form is altered.
- b. If there are unauthorized additions, conditional or alternate bids or irregularities which make the proposal incomplete, indefinite or ambiguous as to its meaning.
- c. If the bidder adds provisions reserving the right to accept or reject the award or to enter into the contract pursuant to the award.
- d. If the proposal does not contain a unit price for each pay item listed, except in the case of authorized alternate pay items.
- e. If the proposal is submitted as a bid by a bidder other than the one to whom the proposal was issued.
- f. If an owner or a principal officer of the bidding firm which has been declared by the Contracting Agency to be ineligible to bid.
- g. If the proposal guaranty does not meet the requirements of Subsection 2.08.
- h. If the bidder fails to initial any revisions to the unit bid prices.
- i. If more than one proposal for the same work is received from an individual, partner, firm, corporation, joint venture or combination thereof under the same or a different name.
- j. If unit prices are obviously distorted to reflect an advantage to the Contractor which would result in undue expenditure of public funds and/or overrun of total cost of project.
- k. When the plans, specifications or proposal contain an obvious error or omission which could have been cause for non-uniform bidding.

**2.14 Proposal / Bid Guaranty:** When notice of a bid mistake and a request to withdraw the bid is made, the proposal/bid guaranty will be returned to the bidder once it has been determined that a mistake had been made in accordance with Subsection 2.10.

**2.15 Bid Withdrawal Consequences:** If it has been determined that an error has been made and the bidder is allowed to withdraw a bid, the individual, partnership, corporation, or any other legal entity or joint venture submitting the bid will not be allowed to resubmit a bid on the project, perform work on the project as a subcontractor or sub-subcontractor, or to supply any material or labor to the entity to whom the contract is ultimately awarded.

If all bids are rejected after a bid is successfully withdrawn, the withdrawn bidder shall not be eligible to bid on the project unless the advertisement and opening of bids for the work is at least on hundred eighty days after the date the bid is withdrawn.

### 3. AWARD AND EXECUTION OF CONTRACT

- 3.01 Consideration of Bids:** After paper or electronic bids are opened and read, they will be compared on the basis of the summation of the products of the quantities and the unit bid prices in the schedule of items. Results of such comparisons will be available to the public.

The right is reserved to reject proposals or advertise for new proposals.

- 3.02 Rejection of All Bids:** All bids may be rejected for just cause consisting of any of the following:
1. The Contracting Agency's unavailability of funds sufficient for the construction of the project or the unavailability of funding participation in the project by anticipated funding sources.
  2. The failure of all bidders, not considered as irregular, to submit a bid within the established threshold of the construction estimate for the project by the Contracting Agency' Engineer.
  3. A substantial change in scope or design of the project occurring prior to award.
  4. A determination of the Contracting Agency or the funding agency not to build the proposed project within twelve months of the letting date.
  5. The discovery, by the Contracting Agency prior to award, that an error, defect, or ambiguity was contained within the bidding documents, that these defects may have affected the integrity of the competitive bidding process or may have led to a potential advantage or disadvantage to one or more of the bidders.

- 3.03 Award of Contract:** The award of contract, if awarded, will be made to the lowest qualified bidder whose proposal complies with all requirements prescribed within 45 calendar days after opening bids unless extended by mutual agreement between the Contracting Agency and successful low bidder. The successful bidder will be notified by letter mailed to the address shown in the proposal that the bidder is awarded the contract.

- 3.04 Cancellation of Award:** The Contracting Agency reserves the right to cancel the award of contract at any time before execution of said contract by all parties without liability against the Contracting Agency or Department.

- 3.05 Return of Proposal Guaranty:** Proposal guaranties of unsuccessful bidders will be returned to them within 15 calendar days after opening bids. The proposal guaranty of the successful bidder will be returned after satisfactory payment and performance bonds have been furnished and the contract has been executed.

- 3.06 Requirement of Payment and Performance Bonds:** The successful bidder, at the time of the execution of the contract, must deposit with the Contracting Agency a performance bond of a surety company authorized to do business in Louisiana, in the amount of the total bid, conditioned that such work shall be performed in accordance with the plans, specifications and terms of the contract, and no surety company in which the bidder for the work has an interest will be accepted as surety on the bond. In addition, the successful bidder will furnish at the same time a payment bond in the penal sum of one hundred (100) percent of the original amount of the contract as a guarantee that all payments covering labor and material used or reasonably required for use in the performance of the contract will be promptly made to laborers and material men. Bonds shall be given on forms provided by the Contracting Agency.

The following conditions shall be met:

- a. Surety bond written for a public works project shall be written by a surety or insurance company currently on the U.S. Department of the Treasury Financial Management Service list of approved bonding companies to write Bonds in Louisiana. Said list is published annually in the Federal Register.

- b. For any public works project, no surety or insurance company shall write a bond which is in excess of the amount indicated as approved by the U.S. Department of the Treasury Financial Management Service list.

**3.07 Execution and Approval of Contract:** The successful bidder will be required to execute the contract and furnish bonds satisfactory to the contracting agency within ten (10) days after such contract is submitted to said successful bidder for execution. In the case of a corporation, the officer or agent to execute the contract must be designated in a Corporate Resolution executed by the Board of Directors, duly certified by the Secretary, and bearing the seal of the corporation. When the successful bidder is a partnership, a Power of Attorney designating one member of the firm to execute the contract shall be filed with the contracting agency. This Power of Attorney must bear the signature of all partners and must be duly executed before a Notary. Any officer or agent signing on behalf of the surety bonding the Contractor will be required to file Power of Attorney and will be required to affix the seal of the surety to all bonds executed.

If the contract is not executed by the Contracting Agency within 30 calendar days following receipt from the bidder of the signed contract and bond, the bidder shall have the right to withdraw his bid without penalty.

**3.08 Failure to Execute Contract:** Failure by the bidder to execute the contract and file acceptable payment and performance bonds within 10 calendar days after the contract has been mailed to the bidder will be cause for cancellation of the award and forfeiture of the proposal guaranty which shall become the property of the Contracting Agency not as a penalty, but in liquidation of damages sustained. Award may then be made to lowest responsible bidder or the work may be re-advertised for bids, at the Contracting Agency discretion.

**3.09 Notice to Proceed:** The Contracting Agency will issue the Notice to Proceed or a Conditional Notice to Proceed not later than 30 calendar days after execution of the contract unless it is in the best interest of the Contracting Agency to issue an extension.

If the Notice to Proceed is not issued within 60 calendar days after execution of the contract, the Contractor may at any time thereafter demand cancellation of the contract, unless an extension is approved in writing by the Contracting Agency and Contractor.

After award of the contract, the project engineer will schedule a preconstruction conference. The preconstruction conference will be held prior to performing any work on the project, preferably during the assembly period, but not later than the first day of field operations. The engineer will schedule the conference sufficiently in advance to permit the attendance of all parties concerned. The contractor is urged to have all subcontractors and major suppliers in attendance at the preconstruction conference.

#### 4. SCOPE OF WORK

**4.01 Intent of Contract:** The intent of the contract is to provide for performance and completion of the work described. The Contractor is obligated to complete the project in accordance with the contract documents.

The Scope of Work consists of, but is not limited to, the following:

- a. All Work necessary to perform, construct, and complete the items described by the Contract, which may include extra work;
- b. All Work made necessary by an increase in the quantity of a major or minor pay item;
- c. All other Work incidental and necessary to perform, construct, and complete the Work specifically referenced or described by the Contract and necessary for delivery of a completed Project conforming to the Contract and suitable for its intended purpose;
- d. The performance of any testing as directed by the engineer to determine if any work or any finished product complies with the Contract, and;
- e. Except as provided in 5.03, to correct and/or replace deficient or nonconforming work, materials, or finished product at no additional cost or expense to the Contracting Agency with work, materials, or finished product that does conform to the Contract.

To that end, the Contractor shall furnish all labor, materials, equipment, tools, transportation and supplies required to complete the work in accordance with best industry practices and the Contract, with the Contract taking precedence over industry practices. Performance methods and sequences are described in the contract documents when considered necessary for the successful completion of the project.

When an item in the contract contains a choice to be made by the Contractor, the Contractor shall indicate the choice to the Engineer in writing.

When the project specifications reference or require the use of “manufacturer’s recommendations or specifications”, the Contractor shall supply the Engineer with a current copy of these recommendations or specifications.

The contractor acknowledges, and expressly agrees, that this public works project is based on estimates of anticipated work; that changes in the work, item quantities, planned work sequences, or methodology can be expected; that the contract does not guarantee any bid profit margin, any bid overhead recovery, or scope of work; and that payment, in accordance with 10.02, will be made only for fully completed work that is accepted, and for the materials incorporated therein.

As work on the Project progresses and in accordance with Section 10.06, the Contracting Agency shall make partial payments of the Contract Price, as adjusted in accordance with the Contract. The Contracting Agency shall adjust the Contract Amount as necessary to compensate the Contractor reasonably and fairly for any extra work ordered by the Contracting Agency and/or Engineer.

Subject to the Contractor’s right to bring legal action against the Contracting Agency, the Contractor shall deliver the project to the Contracting Agency within the contract time as adjusted in accordance with the Contract.

**4.02 Alteration of the Contract:** The Contracting Agency reserves the right to order such alterations in quantities and plans, within the general scope of the contract, including alterations in grade and alignment, as deemed necessary or desirable in order to complete the work as contemplated. Contract items affected by such alterations shall be performed in accordance with the project specifications and payment will be made at the same unit prices as other parts of the work, except as provided in Subsection “Measurement and Payment”.

The Contracting Agency reserves the right to order work not provided for in the contract whenever such work is found essential or desirable to satisfactory completion of the contract within its intended scope. Such work shall be performed in accordance with specifications and as directed. Payment for such work will be made as provided in Subsection "Measurement and Payment".

The Contracting Agency reserves the right to order changes in details, including changes in materials, processes and sequences, whenever such changes are in the best interest of the public or are necessary or desirable to satisfactory completion of the work. Such changes in details shall be performed in accordance with the specifications and as directed, and payment will be made as provided in Subsection "Measurements and Payment". Changes ordered in details, when such changes are allowed or required by the contract, are not alterations to the contract and payment for the affected work will be made at the contract unit prices.

An approved change order will be executed by the Contracting Agency and the contractor to alter the contract in accordance with these and other similar provisions of the contract when any alteration is more than incidental, as determined by the Contracting Agency, to other work specified in the contract. The change order will describe the nature and scope of the contract alteration and the increase or decrease in the contract amount or time. A change order is fully executed and a binding amendment to the contract.

The adjustment in Contract Amount and/or Contract Time stated in a change order shall comprise the total price and/or time adjustment due or owed the contractor for the work or changes defined in the change order.

In the event the contractor refuses to execute a disputed change order, the Contracting Agency reserves the right to execute a change order without the contractor's assent in order to document the contract alteration and adjust the contract amount and/or time accordingly.

Alterations to the contract as provided for by this Subsection shall not invalidate the contract nor release the surety, and the Contractor agrees to accept the work as altered, as if it had been part of the original contract. The Contractor shall notify the surety of any alterations to the contract.

Alterations of the contract shall not involve work beyond the termini of the proposed work except as necessary to satisfactorily complete the project.

No change order will be assumed to be approved until the signed and approved change order is returned to the originator.

**(a) Differing Site Conditions.**

(1) During the progress of the work, if subsurface or latent physical conditions are encountered at the site differing materially from those indicated in the contract, or if unknown physical conditions of an unusual nature differing materially from those ordinarily encountered and generally recognized as inherent in the work provided for in the contract are encountered at the site, the contractor discovering such conditions shall promptly notify the Contracting Agency in writing of the specific differing conditions before they are disturbed and before the affected work is performed.

(2) Upon written notification, the Contracting Agency will investigate the conditions and if he determines that the conditions materially differ and cause an increase or decrease in the cost or time required for the performance of any work under the contract, an adjustment, excluding loss of anticipated profits, will be made and the contract modified in writing accordingly. The Contracting Agency will notify the contractor of his determination whether or not an adjustment of the contract is warranted.

(3) No contract adjustment, which results in a benefit to the contractor, will be allowed unless the contractor has provided the required written notice.

**(b) Suspensions of Work Ordered by the Contracting Agency.**

(1) If the performance of all or any portion of the work is suspended or delayed by the Contracting Agency/Engineer in writing for an unreasonable period of time (not originally anticipated, customary or inherent to the construction industry) and the contractor believes that additional compensation and/or contract time is due as a result of such suspension or delay, the contractor shall submit to the Contracting Agency in writing a request for adjustment within 7 calendar days of receipt of the notice to resume work. The request shall set forth the reasons and support for such adjustment.

(2) Upon receipt, the Contracting Agency will evaluate the contractor's request. If the Contracting Agency agrees that the cost and/or time required for the performance of the contract has increased as a result of such suspension and the suspension was caused by conditions beyond the control of and not the fault of the contractor, its suppliers, or subcontractors, and not caused by weather, the Contracting Agency will make an adjustment (excluding profit) and modify the contract in writing accordingly. The Contracting Agency will notify the contractor of his determination whether or not an adjustment of the contract is warranted.

(3) No contract adjustment will be allowed unless the contractor has submitted the request for adjustment within the time prescribed.

(4) No contract adjustment will be allowed under this clause to the extent that performance would have been suspended or delayed by any other cause, or for which an adjustment is provided for or excluded under any other term or condition of this contract.

**(c) Significant Changes in the Character of Work.**

(1) The Contracting Agency reserves the right to make, in writing, at any time during the work, such changes in quantities and such alterations in the work as are necessary to satisfactorily complete the project. Such changes in quantities and alterations shall not invalidate the contract nor release the surety, and the contractor agrees to perform the work as altered.

(2) If the alterations or changes in quantities significantly change the character of the work under the contract, whether or not changed by any such different quantities or alterations, an adjustment, excluding loss of anticipated profits, will be made to the contract. The basis for the adjustment shall be agreed upon prior to the performance of the work. If a basis cannot be agreed upon, then an adjustment will be made wither for or against the contractor in such amount as the Contracting Agency may determine to be fair and equitable.

(3) If the alterations or changes in quantities do not significantly change the character of the work to be performed under the contract, the altered work will be paid for as provided elsewhere in the contract.

(4) The term "significant change" shall be constructed to apply only to the following circumstances.

a. When the character of the work as altered differs materially in kind or nature from that involved or included in the original proposed construction or;

b. When a major item of work, as defined elsewhere in the contract, is increased, or decreased, in excess of 25 percent of the contract quantity as awarded. Any adjustment in unit price will be made on only that portion of the major item exceeding the 25 percent increases, or, in the case of a decrease of the item by 25 percent or more the remaining portion will be adjusted.

**(d) Eliminated Items.**

Should any items contained in the contract be found unnecessary for proper completion of the work, the engineer may, upon written order to the contractor, eliminate such items from the contractor. Such action shall not invalidate the contract.

When an item is eliminated, the contractor will be reimbursed for authorized work done toward completion of the item. No allowance, except as provided herein, will be made for any increase expense, loss of expected reimbursement or loss of anticipated profits claimed by the contractor resulting either directly from such elimination or indirectly from unbalanced allocation among the

pay items of overhead expense by the contractor and subsequent loss of expected reimbursements therefore or for other reasons.

The change order authorizing reimbursements shall show how the reimbursements were derived. Except when otherwise authorized by the Contracting Agency, such derivation shall show breakdowns of costs as detailed in Subsection 10.04, Headings (a) through (g).

**(e) Extra Work**

When necessary or desirable to complete the project, the Contracting Agency may direct the contractor to perform unforeseen work for which there is no pay item or unit price in the contract. The Contracting Agency will pay for such work in accordance with Subsection 10.04 based on an approved change order.

**4.03 Maintenance of Traffic:** The contractor shall provide for and maintain through and local traffic at all times and shall conduct his operations in such manner as to cause the least possible interference with traffic at junctions with roads, streets and driveways in accordance with Section 402, unless otherwise noted in plans or special provisions.

The contractor shall keep the portion of the project being used by public traffic, whether through or local traffic, in such condition that traffic (including mail delivery) will be adequately accommodated. The contractor shall furnish, erect and maintain barricades, warning signs and delineators, and shall provide flaggers and pilot cars in accordance with the plans and the MUTCD. The contractor shall maintain existing drainage and also provide and maintain in a safe condition all temporary approaches or crossings, intersections with roads, streets, businesses, parking lots, residences, garages and farms, at no direct pay.

When the engineer directs additional measures for the benefit of the traveling public, payment to the contractor will be made at the contract unit prices in the contract or as provided in 109.04. The engineer will be the judge of work to be classed as additional measures.

All lane closures, including ramps, shall be authorized by the engineer. Unless otherwise authorized, lane closures will only be allowed while work is being performed. The contractor shall provide the engineer a five calendar day notice, prior to any lane closure unless a shorter notification period is allowed by the engineer. A late lane opening rental will be charged to the contractor for any lane closure on any roadway or ramp that extends beyond the allowed closure times. The rental shall be computed in hourly increments only, with fractions of an hour rounded up to the next whole hour. The rental will also apply to any unauthorized lane closures by the contractor, whether short term or long term. Any rental monies assessed for a late lane opening or for an unauthorized lane closure will be deducted from payments due the contractor. The late lane opening rental or unauthorized lane closure rental will be in accordance with Table 104-1 for a maximum of four continuous hours per instance.

**Table 104-1**  
**Unauthorized Lane Closure or Late Lane Opening Rental**

Current Average Daily Traffic (Vehicles per Day) stated in contract Documents	Hourly Rate (\$/Hour)
<10,000	250
10,000 – 20,000	1,250
20,000 – 35,000	5,000
35,000 – 50,000	11,500
>50,000	15,000

**4.04 Final Cleaning Up:** Before final acceptance, the right-of-way, borrow and local material sources, and areas occupied by the contractor in connection with the work shall be cleaned of rubbish, excess materials,

temporary structures, haul roads and equipment. All parts of the work, including property adjacent to the right-of-way, which have been damaged or rendered unsightly during the work shall be left in satisfactory condition and when required, the right-of-way shall be mowed, all at no direct pay.

- 4.05 Guarantee and Warranty of Contractor's Work:** By signing the contract the contractor guarantees and gives full warranty (1) of the quality of materials incorporated into the work, (2) that all work will be performed in a good and workmanlike manner, (3) that the finished product will be fit for its intended use and purpose and constructed in conformity with the Contract, and (4) that the contractor's work will be otherwise free of all defects.

For the purpose of this subsection, defect shall be understood to mean and to include all conditions or characteristics of the contractor's work not in conformity with the project plans and specifications including, without limitation, any nonconformity with the project plans and specifications that (1) renders the contractor's work inconsistent with applicable design standards, (2) that the contractor has not declared prior to Final Acceptance, or (3) that the Contracting Agency has not observed or detected in the course of Final Inspection. Defect shall be understood to exclude reasonably anticipated depreciation or deterioration of the contractor's work and all other conditions arising exclusively from the intended use of the finished product and not caused by a defect as defined in this paragraph.

At no direct pay and in accordance with the instruction of the engineer, the contractor shall remediate or replace any work which the Contracting Agency determines to be defective during the guarantee and warranty term.

If it should be found that portions of the Project failed due to defective material or faulty workmanship and if such defective portions cause any breakdown or accident, the contractor will not only be required to furnish and install the replacement portion, but will also be held responsible to the Contracting Agency for all expenses due to accident or breakdown caused by such a failure, including the repair or replacement of any other portion damaged by the failed portion, and/or the replacement of any other portion or equipment when such replacement is necessitated by the replacement of the portion which is the subject of the warranty.

This guarantee does not include an obligation by the contractor, or the Contracting Agency, to maintain the contractor's work during the guarantee and/or warranty period, or otherwise.

- 4.05.1 Equipment, Instruction Sheets:** For the purpose of this subsection, equipment shall be understood to mean and to include all equipment, project component, apparatus, and/or all parts of such equipment (1) purchased or acquired by the contractor subject to an express warranty provided by the manufacturer of the equipment, and (2) installed by the contractor in accordance with project plans and specifications.

Instruction sheets that are required to be furnished by the manufacturer for installed project equipment, apparatus, materials, supplies, and operation shall be delivered by the contractor to the engineer prior to final acceptance of the project, with the following written warranties and guarantees:

1. Unless otherwise specified, the manufacturer's standard warranty for each piece of installed project equipment, project component, or apparatus furnished under the contract.
2. The contractor's guarantee that, during the guarantee period, necessary repair or replacement of the warranted equipment, project component, or apparatus will be made by the contractor at no direct pay.



3. The contractor's guarantee for satisfactory operation of installed project equipment including, but not limited to, the mechanical and electrical systems furnished and constructed under the contract for the guarantee period.

To extent possible, contractor shall acquire all such warranties in the name of and for the benefit of contractor and the Contracting Agency. Otherwise, Contractor shall assign and subrogate all of contractor's rights under all express warranties of such equipment or project components, or parts of thereof, to the Contracting Agency and deliver such to the Contracting Agency before acceptance of the work.

The term of the warranty or guarantee period shall commence upon the final acceptance date of the project. If it should be found that parts or portions of equipment failed due to defective material or faulty workmanship and if such parts should, within the manufacturer's warranty period, cause any breakdown or accident, the contractor, during the term of its guarantee period, will not only be required to furnish and install the replacement part, but will also be held responsible to the Contracting Agency for all expenses due to accident or breakdown caused by such a failure, including the repair or replacement of any other equipment damaged by the failed equipment, and/or the replacement of any other equipment when such replacement is necessitated by the replacement of the equipment or part which is the subject of the warranty.

The contractor shall insert one copy of all warranties and guarantees into the maintenance manuals specified. Routine maintenance during the guarantee period will be performed by the Contracting Agency.

## 5. CONTROL OF WORK

- 5.1 Authority of Engineer:** The Engineer will be the Contracting Agency's representative during construction. The Engineer shall be authorized to inspect all work and all materials. Such inspection may extend to all or any part of the work and to the preparation or manufacture of materials to be used.

The Engineer will decide all questions which arise as to the quality or acceptability of materials furnished and work performed, rate of progress of the work, interpretation of plans and specifications, and acceptable fulfillment of the contract by the Contractor.

The Engineer will have the authority to suspend the work wholly or in part due to failure of the Contractor to correct conditions unsafe for workmen or the general public; for failure to carry out provisions of the contract; for failure to carry out orders; for such periods as deemed necessary due to unsuitable weather; for conditions considered unsuitable for prosecution of the work; or for other conditions or reasons deemed to be in the public interest.

Orders to suspend the work will be in writing and will include the reasons for the suspension. The order to resume work will also be in writing.

The approval or acceptance by the Engineer of submissions by the Contractor will be subject to satisfactory installation and performance. Such approval shall not relieve the Contractor of responsibility under the contract for successful completion of the work or responsibility for compliance with the terms and conditions of the contract.

- 5.2 Plans and Working Drawings:** Plans will show lines, grades, typical sections, location and details of structures, and a summary of bid items. The Contractor shall keep one set of plans available at the work site at all times.

Working drawings, unless included in the plans, shall be furnished by the Contractor and shall consist of detailed plans required to adequately control the work. They shall include stress sheets, shop drawings, erection plans, falsework plans, form drawings, cofferdam plans, bending diagrams for reinforcing steel, proposed location of construction joints or other supplementary plans or data required of the Contractor. Working drawings will be approved by the Engineer and such approval will not relieve the Contractor of responsibility under the contract for successful completion of the work or responsibility for details shown on the working drawings to conform to the contract.

- 5.3 Conformity with Plans and Specifications:** All work and materials shall conform to the lines, grades, sections, dimensions and material requirements of the contract.

When the Engineer finds the materials furnished, work performed, or the finished product not within reasonably close conformity with the contract but that reasonably acceptable work has been produced, the Engineer will determine to what extent the work will be accepted and remain in place. If accepted, the Engineer will document the basis of acceptance by plan change and/or special agreement. The plan change and/or special agreement will contain appropriate documentation for an adjustment in the contract price for the work or materials as necessary to support the Engineer's determination. Reduced pay schedule will be used when such schedules are a part of the project specifications.

If the Engineer finds the materials, work performed, or the finished product not within reasonably close conformity with the contract and have resulted in an unsatisfactory or unacceptable product, the work or materials shall be removed and replaced or otherwise corrected by the Contractor to the satisfaction of the Engineer at no direct pay.

If due to the Contractor's negligence or selected method of operation in performing the work, the Engineer deems it necessary to make changes, the Contractor will be liable for the additional design cost to the Contracting Agency. The amount of such design cost will be the salary cost of design personnel plus 110 percent. The amount thus determined will be deducted from payments for the work.

- 5.4 Coordination of Plans and Specifications:** These specifications, the supplemental specifications, the plans, special provisions and supplementary documents are essential parts of the contract. A requirement occurring in one is as binding as though occurring in all. They are intended to be complementary and to describe and provide for a complete work. In case of discrepancy, calculated dimensions govern over scaled dimensions; plans govern over standard specifications, supplemental specifications and technical specifications; supplemental specifications govern over standard specifications; technical specifications govern over supplemental specifications and standard specifications; and special provisions govern over plans, technical specifications, supplemental specifications and standard specifications.

The Contractor shall take no advantage of any error or omission in the plans or project specifications. If the Contractor discovers such an error or omission, he shall immediately notify the Engineer. The Engineer will then make such corrections and interpretations as deemed necessary to fulfill the intent of the plans and project specifications.

- 5.5 Cooperation by Contractor:** The Contractor will be supplied a maximum of five sets of plans and contract assemblies without charge. Additional copies will be furnished upon request at the appropriate charge for reproduction services. The Contractor shall keep one complete set of plans and other contract documents available at the worksite.

The Contractor shall give the work the attention necessary to facilitate the progress thereof, and shall cooperate with the Engineer, Inspectors and other Contractors.

The Contractor shall have on the work at all times, as the Contractor's agent, a competent superintendent capable of reading and understanding the plans and project specifications and experienced in the type of work being performed, who is English speaking and who shall receive instructions from the Engineer. At the pre-construction conference or upon request, the Contractor shall furnish the Engineer written notice of the name and home telephone number of the superintendent. The superintendent shall have authority to execute orders or directions of the Engineer without delay and to promptly supply such materials, equipment, tools, labor and incidentals as required. The superintendent shall be furnished regardless of the amount of work sublet.

The Contractor shall furnish the Engineer written notice of the names of persons authorized to sign for him in matters pertaining to plan changes, force account or extra work, contract time charges and other documents. No work shall commence on the project until the Contractor has complied with this requirement. Such written notice shall also be furnished when a person so designated is removed and replaced.

- 5.6 Cooperation with Utilities:** The Contracting Agency will notify all known utility companies, pipeline owners or other parties affected by the work and endeavor to have the necessary adjustments of public or private utility fixtures, pipelines and other appurtenances within or adjacent to the limits of construction made as soon as possible.

Upon award of the contract, utility companies affected will be advised by the Contracting Agency of the name and address of the Contractor, the approximate date work will begin and other pertinent information.

Except as hereinafter provided, and regardless of whether the utility is shown on the plans or referred to in the project specifications, all water lines, gas lines, wire lines, fiber optic cables, telephone lines, cable

television lines, service connections, water and gas valve boxes, light standards, cableways, signals and other utility appurtenances within construction limits which prevent completion of the Contractor's work will be relocated or adjusted by the owners at no expense to the Contractor. The contract will indicate utility items to be relocated, adjusted or constructed by the Contractor.

Where a utility crosses or otherwise occupies an area within construction limits of the project and the utility will not have the Contracting Agency's required clearance when the work is completed, it shall be the Contracting Agency's responsibility to arrange for necessary relocation to the required clearance. When the required clearance will exist when the work is completed, but relocation is considered necessary by the Contractor for construction purposes, the Contractor shall make arrangements with the utility owner for any relocation or adjustment necessary to the operations at no direct pay. In such cases, upon completion of the work and prior to final acceptance, the final location of the utility will be acceptable to the Contracting Agency. Nothing herein shall be interpreted to mean that the Contracting Agency waives its rights to control entrance onto, or location on, its right-of-way of any utility or appurtenance.

It is agreed that the Contractor has considered in the bid all permanent and temporary utility appurtenances in their present or relocated positions and that no additional compensation will be allowed for delays, inconvenience or damage sustained due to interference from the said utility appurtenances or the operation of moving them.

When the Engineer determines that the Contractor is experiencing significant delays in the controlling items of work because of delays by others in removing, relocating or adjusting utility appurtenances, contract time credits will be considered for such delays.

On the date stipulated in the Notice to Proceed, the Contractor shall begin work in connection with fencing, clearing, grubbing, removal of structures and obstructions, and relocation and demolishing of other structures, and shall prosecute such work to completion to avoid delays in removal or adjustment of utilities. The Contractor shall cooperate with the utility companies to avoid delays in completion of work due to non-removal or non-adjustment of utilities.

When the contractor's work involves excavating or underground demolition activity, the contractor is required to reach Louisiana One Call, 48 hours prior to starting any work, by calling (225) 275-3700 or toll-free 1-800-272-3020, or by fax (225) 272-1967 in order to comply with the Louisiana Underground utilities and Facilities Damage Prevention Law.

**5.7 Cooperation Between Contractors:** The Contracting Agency reserves the right to contract for and perform additional work on or near the work covered by the contract.

When separate contracts are let within, adjoining, or adjacent to the limits of the project, each Contractor shall conduct the work not to hinder the progress of work by other Contractors and shall cooperate with each other as directed.

The Contractor shall arrange the work and shall place and dispose of materials being used not to interfere with the operation of other Contractors within, adjoining, or adjacent to the limits of the project. The Contractor shall acceptably join the work with that of other Contractors and shall perform the work in proper sequence to that of the others and without causing disruption or delay to the schedule of project completion.

The Contractor shall assume all liability, financial and otherwise, in connection with the contract and shall hold the Contracting Agency harmless and indemnify the Contracting Agency from all damages or claims that may arise because of inconvenience, delay, or loss experienced by the Contractor or caused to other Contractors due to the presence and operations of other Contractors working within, adjoining or adjacent to the limits of the projects.

- 5.8 Construction Stakes, Lines and Grades:** The Engineer will furnish and establish in the field control points suitable to establish line and grade. A minimum would be two points to establish line and one point to establish grade. If a baseline has been established, it will be shown on the plans and the Engineer will provide to the Contractor a copy of the field notes pertaining to this baseline. Bench mark or temporary bench mark shall be shown on the plans.

After the control points have been established by the Engineer, the Contractor shall be responsible for proper execution of the work to such lines and grades, and preservation of the line and grade stakes. The Contractor shall be responsible for construction layout.

- 5.9 Authority and Duties of the Engineer:** As the direct representative of the Contracting Agency, the Engineer is responsible for administration of the contract. The Engineer shall have authority to give directions pertaining to the work and for consideration of the public, to reject defective materials and equipment, and to suspend work in accordance with Section 5.01. Except as permitted and instructed by the Contracting Agency, the Engineer is not authorized to alter or waive provisions of the contract, alter quantities; order extra and force account work, or accept any portion of the project. In no case will the Engineer perform any duties for or act as the representative of the Contractor.

When the work is being done by force account, the Engineer shall direct the work as necessary. The authority to direct will include, but is not limited to, sequence and location of work; number, category and caliber of workers; number and type of equipment; and hours of work. These directions shall not relieve the Contractor of responsibility to supervise the work and provide a product meeting the requirements of the contract.

- 5.10 Duties of the Inspector:** Inspectors representing the Contracting Agency will be authorized to inspect all work. Such inspection extends to any part of the work and to preparation, fabrication or manufacture of materials to be used. The inspector will not be authorized to issue instructions contrary to the contract; however, the inspector will have authority to reject work or materials until any question can be referred to and decided by the Engineer. In no case will the inspector perform any duties for, or act as a representative of the Contractor.

- 5.11 Inspection of Work:** All material and each part or detail of the work shall be subject to inspection by the Engineer and/or inspectors shall be allowed safe and convenient access to all parts of the work and shall be furnished with such information and assistance by the Contractor as required to make a complete inspection. Such inspection will not relieve the Contractor from the obligation to furnish acceptable materials or to perform all work in accordance with the contract.

If ordered by the Engineer, the Contractor, at any time before acceptance of the work, shall remove or uncover such portions of the finished work as directed. After examination, the Contractor shall restore said portions of the work to the standard required by the project specifications. Should the work thus exposed prove acceptable, the uncovering or removing, and the replacing of the covering or making good of the parts removed will be paid for as extra work; but, should the work so exposed prove unacceptable, the uncovering or removing, and the replacing of the covering or making good of the parts removed, will be at no direct pay.

Work done or materials used without supervision or inspection by an authorized Contracting Agency's representative may be ordered uncovered for examination and recovered, or removed and replaced, all at the Contractor's expense.

When a unit of government or political subdivision or other public or private entity is to pay a portion of the cost of the work covered by the contract, its representatives shall have the right to inspect the work. Such inspection shall not make any unit of government, political subdivision or corporation a party to the contract and shall not interfere with the rights of either party there under.

Inspection by the Engineer or by any of his duly authorized representatives; any order, measurement or certification by the Engineer; any order by the Contracting Agency for the payment of money; any payment for or acceptance of any work; any extension of time; or any possession taken by the Contracting Agency shall not operate as a waiver of any provisions of the contract, or any power therein preserved to the Contracting Agency, or of any right to damages therein provided. Any waiver of any breach of the contract shall not be held to be a waiver of any other or subsequent breach.

The Contracting Agency reserves the right to correct any error that may be discovered in any estimate that may have been paid and to adjust the same to meet the requirements of the contract and specifications. Upon conclusive proof of collusion or dishonesty between the Contractor or his agents and the Engineer in charge of the work or his assistants being discovered in the work after final payment has been made, the Contracting Agency reserves the right to claim and recover by process of law, sums as may be sufficient to correct the error or make good the defects in the work resulting from such error, dishonesty or collusion.

#### **5.12 Inspector's Stamp for Shipment:**

- a. **Approval for Shipment:** When materials requiring shop or plant inspection are ready for shipment, the Contracting Agency's Inspector shall indicate his approval. Each shipment piece, keg, box or bound pallet shall be marked by the inspector.

Application of the Inspector's approval implies that at the time of inspection it was the opinion of the Inspector that the product was fabricated or manufactured from accepted materials by approved processes and painted, if required, in accordance with the contract. The Inspector's approval for shipment does not imply that the products will not be rejected by the Engineer if subsequently found to be defective.

- b. **Rejection:** The Inspector will reject material and workmanship that does not conform to the contract.

Approval of products by the Inspector shall not preclude further testing and inspection by the Engineer.

Defective materials and workmanship, whenever discovered, will be rejected and shall be repaired or replaced at no direct pay. All repair procedures shall be approved.

- c. **Shipment of Material Not Approved:** Materials and fabricated items subjected to shop inspection will not be accepted at the project site if they do not bear the Inspector's approval for shipment. If the products are not approved because they were not offered for shop inspection, or were shipped after rejection at the shop, the products shall be returned to the shop for inspection and correction as necessary.

In lieu of this requirement, the Engineer may allow inspection to be performed at the project site at the Contractor's expense.

#### **5.13 Removal of Unacceptable and Unauthorized Work:** Work not conforming to the contract will be considered unacceptable, unless otherwise determined acceptable under the provisions in Subsection 5.03.

Unacceptable work found to exist prior to final acceptance of the work shall be removed and acceptably replaced, by the Contractor.

No payment will be made for work done contrary to instructions of the Engineer, work done beyond lines shown on the plans or as given, or extra work done without authority. Work so done may be ordered removed or replaced at the Contractor's expense.

Upon failure of the Contractor to comply with any order of the Engineer made under the provisions of this Subsection, the Engineer will have authority to cause unacceptable work to be remedied or removed and replaced and unauthorized work to be removed and to deduct the costs from payments for the work.

- 5.14 Load Restrictions:** The Contractor, Subcontractors and suppliers shall comply with legal load restrictions in hauling of materials or equipment on completed bridge structures, bases and pavements. A special permit will not relieve the Contractor of liability for damage resulting from moving of material or equipment. In no case shall the legal load limits be exceeded unless permitted in writing.

Operation of equipment of such weight or height or so loaded as to cause damage or overstress to structures, roadways or other construction will not be permitted. Hauling of materials over the base or surface course under construction shall be limited as directed. The Contractor shall be responsible for all damage done by hauling equipment. The Contracting Agency may withhold payment equal to the damages. The Contractor is responsible for all damages done by his operation both on and off the right-of-way.

- 5.15 Maintenance During Construction:** The Contractor shall satisfactorily maintain the entire area within the right-of-way limits of the project, from the effective date of the Notice to Proceed until the date of final acceptance. The work shall consist of any existing roadways which are adjacent and parallel to the roadway under construction. This maintenance responsibility includes, but is not necessarily limited to, maintaining drainage, periodic mowing and removing of debris and remains, to the satisfaction of the Engineer, as well as such striping, patching and shoulder maintenance which will provide safe and convenient conditions at all times for motoring public. The Contractor shall continuously and effectively satisfy his maintenance responsibilities with such equipment and forces as may be necessary to maintain a safe and satisfactory condition for the duration of the project.

- 5.16 Failure to Comply with Subsection 5.15:** If the Contractor fails to comply with Subsection 5.15, the Engineer will immediately notify the Contractor in writing of such noncompliance. If the Contractor fails to remedy the condition within 24 hours after receipt of the written notice, the Engineer may immediately remedy the condition, and the cost thereof will be deducted from payments for the work.

When the condition requires more immediate remedy due to hazard to life, health and property, the Engineer may immediately remedy the condition and the costs thereof will be deducted from payments for the work.

- 5.17 Substantial Completion:** When the Contractor considers the entire work ready for its intended use, the Contractor shall notify the Contracting Agency and Engineer in writing that the entire work is substantially complete (except for items specifically listed by the Contractor as incomplete) and request that the Engineer issue a certificate of Substantial Completion. Within a reasonable time thereafter, the Contracting Agency, Contractor and Engineer shall make an inspection of the work to determine the status of completion.

If the Engineer does not consider the work substantially complete, the Engineer will notify the Contractor in writing giving the reasons therefore. If the Engineer considers the work substantially complete, the Engineer will prepare and deliver to the Contracting Agency a tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment. The Contracting Agency shall have seven days after receipt of the tentative certificate during which to make written objection to the Engineer as to any provisions of the certificate of attached list. If, after considering such objections, the Engineer concludes that the work is not substantially complete, the Engineer will within fourteen days after submission of the tentative certificate to the Contracting Agency notify the Contractor in writing, stating the reasons therefore. If, after consideration of the Contracting Agency's objections, the Engineer considers the work substantially

complete, the Engineer will within said fourteen days execute and deliver to the Contracting Agency and Contractor a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as the Engineer believes justified after consideration of an objections from the Contracting Agency.

At the time of delivery of the tentative certificate of Substantial Completion the Engineer will deliver to the Contracting Agency and the Contractor a written recommendation as to division of responsibilities pending final payment between the Contracting Agency and the Contractor with respect to security, operation, safety, maintenance, heat, utilities, insurance and warranties. Unless the Contracting Agency and the Contractor agree otherwise in writing and so inform the Engineer prior to the Engineer's issuing the definitive certificate of Substantial Completion, the Engineer's aforesaid recommendation will be binding on the Contracting Agency and Contractor until final payment.

The Contracting Agency shall have the right to exclude the Contractor from the work after the date of Substantial Completion, but the Contracting Agency shall allow the Contractor reasonable access to complete or correct items on the tentative list.

**5.18 Partial Utilization:** Use by the Contracting Agency of any finished part of the work, which has specifically been identified in the Contract Documents, or by which the Contracting Agency, Engineer and Contractor agree constitutes a separately functioning and useable part of the work that can be used by the Contracting Agency without significant interference with the Contractor's performance of the remainder of the work, may be accomplished prior to Substantial Completion of the work subject to the following:

- a.** The Contracting Agency at any time may request the Contractor in writing to permit the Contracting Agency to use any such part of the work which the Contracting Agency believes to be ready for its intended use and substantially complete. If the Contractor agrees, the Contractor will certify to the Contracting Agency and Engineer that said part of the work is substantially complete and request the Engineer to issue a certificate of Substantial Completion for that part of the work. The Contractor at any time may notify the Contracting Agency and Engineer in writing that the Contractor considers any such part of the work ready for its intended use and substantially complete and request the Engineer to issue a certificate of Substantial Completion for that part of the work. Within a reasonable time after either such request, the Contracting Agency, Contractor and Engineer shall make an inspection of that part of the work to determine its status of completion. If the Engineer does not consider that part of the work to be substantially complete, the Engineer will notify the Contracting Agency and Contractor in writing giving the reasons therefore. If the Engineer considers that part of the work to be substantially complete, the provisions of Subsection 5.17 will apply with respect to certification of Substantial Completion of that part of the work and the division of responsibility in respect thereof and access thereto.
- b.** The Contracting Agency may at any time request the Contractor in writing to permit the Contracting Agency to take over operation of any such part of the work although it is not substantially complete. A copy of such request will be sent to the Engineer and within a reasonable time thereafter the Contracting Agency, Contractor and Engineer shall make an inspection of that part of the work to determine its status of completion and will prepare a list of the items remaining to be completed or corrected thereon before final payment. If the Contractor does not object in writing to the Contracting Agency and Engineer that such part of the work is not ready for separate operation by the Contracting Agency, the Engineer will finalize the list of items to be completed or corrected and will deliver such list to the Contracting Agency and Contractor together with a written recommendation as to the division of responsibilities pending final payment between the Contracting Agency and Contractor with respect to security, operation, safety, maintenance, utilities, insurance, warranties and guarantees for that part of the work which will become binding upon the Contracting Agency and the Contractor at the time when the Contracting Agency takes over such operation (unless they shall have otherwise agreed in writing and so informed the



Engineer). During such operation and prior to Substantial Completion of such part of the work, the Contracting Agency shall allow the Contractor reasonable access to complete or correct items on said list and to complete other related work.

- c. No occupancy or separate operation of part of the work will be accomplished prior to compliance with the requirements in respect of property insurance.

**5.19 Final Inspection:** Upon written notice from the Contractor that the entire work or an agreed portion thereof is complete, the Engineer will make a final inspection with the Contracting Agency and Contractor and will notify the Contractor in writing of all particulars in which this inspection reveals that the work is incomplete or defective. The Contractor shall immediately take such measures as are necessary to remedy such deficiencies.

**5.20 Final Application for Payment:** After the Contractor has completed all such corrections to the satisfaction of the Engineer and delivered all maintenance and operating instructions, schedules, guarantees, Bonds, certificates of inspection, marked-up record documents and other documents - all as required by the Contract, and after the Engineer has indicated that the work is acceptable (subject to the provisions of Subsection 5.23), the Contractor may make application for final payment following the procedure for progress payments. The final Application for payment shall be accompanied by all documentation called for in the Contract, together with complete and legally effective releases or waivers (satisfactory to the Contracting Agency) of all liens arising out of or filed in connection with the work. In lieu thereof and as approved by the Contracting Agency, the Contractor may furnish receipts or releases in full; an affidavit of the Contractor that the releases and receipts include all labor, services, material and equipment for which a lien could be filed, and that all payrolls, material and equipment bills, and other indebtedness connected with the work for which the Contracting Agency or Contracting Agency's property might in any way be responsible, have been paid or otherwise satisfied; and consent of the surety, if any, to final payment. If any Subcontractor or supplier fails to furnish a release or receipt in full, the Contractor may furnish a Bond or other collateral satisfactory to the Contracting Agency to indemnify the Contracting Agency against any lien. The Contractor's application for final payment shall also be accompanied by consent of the surety to final payment and a clear lien and privilege issued by the clerk of court and ex-officio recorder or mortgages of the parish.

**5.21 Final Payment and Acceptance:** If, on the basis of the Engineer's observation of the work during construction and final inspection, and the Engineer's review of the final application for payment and accompanying documentation - all as required by the Contract, the Engineer is satisfied that the work has been completed and the Contractor's other obligations under the Contract have been fulfilled, the Engineer will, within ten days after receipt of the final application for payment, indicate in writing the Engineer's recommendation of payment and present the application to the Contracting Agency for payment. Thereupon the Engineer will give written notice to the Contracting Agency and the Contractor that the work is acceptable subject to the provisions of Subsection 5.23.

Otherwise, the Engineer will return the application to the Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case the Contractor shall make the necessary corrections and resubmit the application. After the presentation to the Contracting Agency of the application and accompanying documentation, in appropriate form and substance, and with the Engineer's recommendation in accordance with Louisiana State Public Contract Statute and notice of acceptability, the amount recommended by the Engineer will become due and will be paid by the Contracting Agency to the Contractor.

If, through no fault of the Contractor, final completion of the work is significantly delayed and if Engineer so confirms, the Contracting Agency shall, upon receipt of the Contractor's final application for payment and recommendation of the Engineer, and without terminating the agreement, make payment of the balance due for that portion of the work fully completed and accepted. If the remaining balance to be held by the

Contracting Agency or work not fully completed or corrected is less than the retainage stipulated in the agreement, and if bonds have been furnished as required the written consent of the surety to the payment of the balance due for that portion of the work fully completed and accepted shall be submitted by the Contractor to the Engineer with the application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

**5.22 Contractor's Continuing Obligation:** The Contractor's obligation to perform and complete the work in accordance with the Contract will be absolute. Neither recommendation of any progress or final payment by the Engineer, nor the issuance of a certificate of Substantial Completion, nor any payment by the Contracting Agency to the Contractor under the Contract, nor any use or occupancy of the work or any part thereof by the Contracting Agency, nor any act of acceptance by the Contracting Agency nor any failure to do so, nor any review and approval of a shop drawing or sample submission, nor the issuance of a notice of acceptability by the Engineer pursuant to Subsection 5.21, nor any correction of defective work by the Contracting Agency will constitute an acceptance of work not in accordance with the Contract or a release of the Contractor's obligation to perform the work in accordance with the Contract (except as provided in Subsection 5.23).

**5.23 Waiver of Claims:** The making and acceptance of final payment will constitute:

- a. A waiver of all claims by the Contracting Agency against the Contractor, except claims arising from unsettled liens, from defective work appearing after final inspection pursuant to Subsection 5.19 or from failure to comply with the Contract or the terms of any special guarantees specified therein; however, it will not constitute a waiver by the Contracting Agency of any rights in respect of the Contractor's continuing obligations under the Contract; and
- b. A waiver of all claims by the Contractor against the Contracting Agency other than those previously made in writing and still unsettled.

**5.24 Claims for Additional Compensation:** If the Contractor deems that additional compensation is due for work or material not covered in the contract or not ordered as extra work by plan change or contract modification, the Contractor shall notify the Engineer in writing of intention to make claim for such additional compensation before beginning the work on which the claim is based or immediately upon encountering the conditions or effects which the contractor claims entitle him to additional compensation. Claims shall conform to the requirements as follows:

**a. Claims for Adjustment and Disputes under Project Specifications:**

- 1) If a Contractor deems that additional compensation may be due for work, material, delays, inefficiencies, disruptions, or other additional costs/or expenses not covered in the contract or ordered as extra work, the Contractor must notify the Engineer, in writing, of his intent to make a request for such additional compensation before beginning the work on which the claim is based or immediately upon encountering the conditions or effects which the contractor claims entitle him to additional compensation.
- 2) This request must be filed with the Engineer so that an accounting can be made of any potential additional cost. If after review by the Engineer an agreement is reached on the issue, a Plan Change should be prepared by the Engineer and submitted through channels for consideration. If the issue cannot be satisfactorily settled, the question should be submitted through channels for adjudication.

**b. Claims not Covered by Project Specifications:**

- 1) If the Contractor deems that other circumstances, not usually governed by the project specifications, have resulted or may result in damages, the Contractor may file for equitable adjustment of the dispute. These circumstances may be delays resulting from action or inaction of the Contracting Agency, plan errors, disagreements with the Engineer's interpretation of the plans and specifications and other causes.
- 2) A copy of a notification to be titled "Contractor's Notification of Contract Dispute" shall be sent by the Contractor to the Engineer.
- 3) After filing the "Contractor's Notification of Contract Dispute" form, the Contractor may file a request for equitable adjustment. However, except in special cases, the Contracting Agency will send the request to the Engineer for first review. The request should contain insofar as is known at the time complete details of the dispute and an estimated cost.
- 4) Upon receipt of request, the Engineer shall immediately (within one week) address the issue. If not resolved, within one month the Engineer shall provide a written analysis of the request, along with supporting documentation and recommendations, to the Contracting Agency. If a claim is anticipated the Engineer shall immediately keep a detailed diary relating to the area in question. (Include personnel, equipment, etc.)
- 5) After review and discussion with the Contracting Agency, the Engineer (within one month) will notify the Contractor, in writing, of the Contracting Agency's decision.
- 6) Upon amicable resolution of the request, a Plan Change (if needed) shall be initiated by the Engineer within one week after notification.

**c. All Claims Will Be Documented:** In the claim, or upon cessation of the activity giving rise to the claim allowing documentation of the entirety of the costs asserted by the Contractor as entitling him to additional compensation under this Subsection, the Contractor shall furnish to the Engineer a statement in schedule form showing (a) all the items and figures which the contractor intends to prove from books of account or other records; and (b) all the items and figures which the Contractor intends to prove by means other than (a) above. The statement shall be sworn under oath by the Contractor to be true and correct as to all facts, records, representations and amounts claimed therein.

- 1) **Record Keeping:** With respect to items and figures to be proven from books of account or other records, each statement shall be prepared in accordance with the requirements set out in the following subparagraphs of this paragraph 1).
  - a) The basic figures, costs and rates from which any claim is computed shall be tabulated in such detail that the statement may be quantified in lieu of producing the books and records from which the pertinent data was taken.
  - b) The statement shall include a complete computation of the total amount of each claim that is based upon or derived from books of account or other records.
  - c) Each separate portion of the statement shall contain a reference showing the particular books and records from which it was taken.
  - d) Where the statement includes a claim for field overhead, office overhead, general or administrative expense, or similar items based upon allocations of entries

shown in books or records, the statement shall itemize such expenses for the period involved, and shall show the accounting method or principle upon which the allocations were made.

e) Where a claim includes an item for machinery or equipment expense, the statement shall show the type, class, capacity, or other identifying description of each major piece of machinery or equipment involved and date of purchase, acquisition cost and book value of each item. If book values are not separately shown in the records, or if some basis of value other than book value is used, the statement shall show how the value is determined. The statement shall contain a complete computation of the equipment and expenses claimed; and unless the costs incurred or the expenses claimed are fully set forth in the books or records, the statement shall show the accounting method, principal or authority upon which such computation is based.

f) The statement shall be accompanied by;

(1) A declaration that the books and records, or any other part thereof upon which the statement is based (including ledgers, journals, payrolls, and the original invoices, vouchers, checks, and other records and documents needed for a verification of the amount claimed or for a determination of the basis upon which the claim was computed) will be made available for examination;

(2) A notice showing the address where such books and records may be examined, together with the name and address of the bookkeeper or accountant who prepared the statement and who will be available for the furnishing of information regarding such books and records in connection with the contractor's claim; and,

(3) A sworn statement by the Contractor or his bookkeeper or accountant certifying that the statement and the records from which they were derived are true and correct.

2) **Items of claim which are not to be proven by record:** With respect to figures to be proven pursuant to above, the Contractor shall comply with the following:

a) The Contractor shall furnish to the Contracting Agency a statement specifying by what means or theories, and the witnesses through whom, the Contractor intends to prove the amount claimed.

b) With respect to prospective witnesses, the Contractor's statement shall indicate as to each witness his name, address and occupation, and the subject or subjects to which the witness's statements will be directed.

c) If due to the nature of the claim and the reliance upon oral evidence of the basis of the claim or quantification of damages asserted, it is necessary that these oral statements be received by the Contracting Agency in order to properly evaluate the claim, the Contracting Agency will notify the Contractor of a date at which the oral statement sought to be submitted will be received under oath and transcribed for evaluation by the Engineer or later judicial review as to the validity of the claim.

- d) If such notification is not given and the Engineer is not afforded proper facilities by the Contractor for keeping account of actual cost, the Contractor agrees to waive any claim for such additional compensation. Such notice by the Contractor and the fact that the Engineer has kept account of the cost aforesaid shall not be construed as proving or substantiating the validity of the claim. If the claim, after consideration by the Engineer or judicial determination is found to be just, payment will be made as specified in Subsection "Measurement and Payment". Nothing in this Subsection shall be construed as establishing any claim contrary to Subsection "Alteration of the Contract".

## 5.25 Suspension of the Work:

### General:

- a. The Engineer may order the Contractor in writing to suspend, delay or interrupt all or any part of the work for such period of time as he may determine to be appropriate for the convenience of the Contracting Agency.
- b. If the performance of all or any part of the work is, for an unreasonable period of time, suspended, delayed, or interrupted by an act of the Engineer in the administration of this contract, or by his failure to act within the time specified in this contract (or if no time specified, within a reasonable time), an adjustment shall be made for any increase in the cost of performance of this contract (excluding profit) necessarily caused by such unreasonable suspension, delay, or interruption and the contract modified in writing accordingly. However, no adjustment shall be made under this clause for any suspension, delay, or interruption to the extent (1) that performance would have been so suspended, delayed, or interrupted by any other cause, including the fault or negligence of the Contractor (2) for which an equitable adjustment is provided for or excluded under any other provision of this contract.
- c. No claim under this clause shall be allowed (1) for any costs incurred more than 20 days before the Contractor shall have notified the Engineer in writing of the act or failure to act involved (but this requirement shall not apply as a claim resulting from a suspension order), and (2) unless the claim, in an amount stated, is asserted in writing as soon as practicable after the termination of such suspension, delay or interruption, but not later than the date of final payment under the contract.

### Weather:

- a. The Engineer may order suspension of the work in whole or in part commencing with the day after receipt of the Notice to Proceed by the Contractor, due to weather or the effects of weather at the site, for such time as he considers it unfavorable for satisfactory prosecution of the work.
- b. When the Engineer orders suspension under "a" of this clause, the contract completion date shall be extended a full contract day for each calendar day during suspension of the work if:
  - 1) All work is suspended except minor items as may be designated in this contract (work of an emergency, protective or maintenance nature may be performed at any time), and
  - 2) The hours lost in any one workday of the authorized work week through suspension equal one-half or more of the hours of an authorized workday.
- c. If the Engineer orders suspension of work as provided in "b" of this clause and the hours lost in the workday immediately preceding a non-workday equal one-half or more of the hours in an authorized workday, the contract completion date shall be extended a full calendar day for each non-workday during suspension of the work.

- d.** When the Engineer orders any suspension of the work under this clause, the Contractor shall not be entitled to any cost or damages resulting from such suspension.
- e.** When the contract completion date is extended under this clause, the contract shall be modified in writing accordingly.

**Noncompliance with Contract Requirements:**

- a.** The Engineer may order suspension of the work in whole or in part for such time as he deems necessary because of the failure of the Contractor to comply with any of the requirements of this contract, and the contract completion date shall not be extended on account of any such suspension of the work.
- b.** When the Engineer orders any suspension of work under “a” of this clause, the Contractor shall not be entitled to any costs or damages resulting from such suspension.
- c.** The rights and remedies of the Contracting Agency provided in this clause are in addition to any other rights and remedies provided by law or under this contract.

## 6.CONTROL OF MATERIALS

- 6.01 Source of Supply and Quality Requirements:** Materials used in the work shall meet all quality requirements of the contract. To expedite inspection and testing of materials, the Contractor shall notify the Engineer of his proposed sources of materials prior to delivery. With written authorization, materials may be approved at the source of supply before delivery is started. If it is found after trial that sources of supply for previously approved materials do not produce specified products, the Contractor shall furnish materials from other sources or make necessary changes to provide acceptable materials.

Wherever the name of a certain brand, make, manufacturer, or definite specification is utilized, they are used only to denote the quality standard of product desired and they do not restrict bidders to the specific brand, make, manufacturer, or specification named; they are used only to set forth and convey to prospective bidders the general style, type, character, and quality of product desired; and equivalent products will be acceptable. It shall be the responsibility of the Engineer to determine what is considered an equivalent product.

**6.02 Local Material Sources:**

- a. Designated Sources:** Possible sources of local materials may be designated in the plans or specifications. The quality of material in such deposits will be acceptable in general, but the Contractor shall determine the amount of equipment and work required to produce a material meeting specifications. It shall be understood that it is not feasible to ascertain from samples the limits for an entire deposit and that variations are to be expected. The Engineer may order procurement of material from any portion of a deposit and may reject portions of the deposit as unacceptable.

The Contracting Agency may acquire and make available to the Contractor the right to take materials from the sources designated in the plans or specifications, with the right to use such property as specified for plant site, stockpiles or haul roads.

When the Contractor desires to use material from sources other than those designated, the Contractor shall acquire the necessary rights or permits to take materials from the sources and shall pay all costs related thereto, including any which may result from increased haul length. All costs of exploring and developing such sources shall be borne by the Contractor. Use of material from other than designated sources will not be permitted until representative samples taken by the Engineer have been approved and written authority is issued for the use thereof.

- b. Contractor Furnished Sources:** When material deposits are not designated in the plans or specifications, the Contractor shall provide sources of acceptable material. When sources of materials are provided by the Contractor, the Contracting Agency may assume the cost of processing samples to determine suitability of material.
- c. Use of Materials Found on the Work:** The Contractor, with written approval, may use on the project such stone, gravel, sand, top-soil or other material determined acceptable by the Engineer found in the excavation. The Contractor shall replace at no direct pay with acceptable material all removed material which was needed for embankments, backfills, approaches or otherwise. No charge for materials so used will be made against the Contractor. The Contractor shall not excavate or remove material from within the right-of-way which is not within construction limits, as indicated by slope and grade lines, without written authorization from the Engineer. If authorization is obtained, payment will not be made for excavation beyond slope and grade lines, nor will payment be made for any required replacement.

Materials from existing structures may be used temporarily by the Contractor in erection of new structures. Modification of such material will not be permitted without written approval.

Prior to requesting the borrow pit to be bored, the Contractor shall furnish the Contracting Agency a written agreement with the property owner to allow the Contracting Agency access to the property. The written agreement shall also state that the Contractor has agreed to purchase the borrow material from the property owner for this particular site if the material meets contract specifications. A separate agreement shall be obtained from each property owner through which access will be necessary.

Sites from which material has been removed shall, upon completion of the work, be left in an acceptable condition.

Unless otherwise authorized in writing, borrow pits, gravel pits and quarry sites shall be located at least 300 feet from the right-of-way.

When sources of borrow are located adjacent to a stream or river listed on the National System of Wild and Scenic Rivers or the Louisiana Natural and Scenic Rivers System, borrow pits, and any stockpiled materials shall be located at least 300 feet from the natural stream or river bank.

**6.03 Samples, Tests, Cited Specifications:** Materials will be inspected, tested and approved before incorporation in the work. Work in which untested and unapproved materials are used shall be performed at the Contractor's risk. Payment will not be made for materials found to be unacceptable and unauthorized and, when directed, shall be removed by the Contractor at no direct pay. Sampling and testing will be performed as directed by the Engineer. Payment to the Contractor will not be made for materials found to be unacceptable and unauthorized and, when directed, shall be removed by the Contractor at no direct pay. Sampling and testing will be performed in accordance with the cited standard method. Acceptance testing will be made by and at the expense of the Contracting Agency. Samples will be taken by an authorized representative of the Contracting Agency. Materials being used will be subject to inspection, test, retest or rejection at any time prior to final acceptance. Copies of test reports will be furnished to the Contractor's representative upon request. The Contractor shall be notified of any failing test. A copy of the failing test report will be furnished to the Contractor.

**6.04 Certificates:** Certificates shall include Certificates of Analysis, Certificates of Compliance, and Certificates of Delivery. These certificates shall be furnished prior to use of materials for which certificates are required. They shall be signed by the material manufacturer, the manufacturer of assembled materials of the material supplier.

Materials used on the basis of these certificates may be sampled and tested at any time. The fact that material is used on the basis of a certificate shall not relieve the Contractor of responsibility for incorporating material in the work which conforms to the plans and specifications.

Distribution of certificates and requirements for further sampling and testing of certified materials shall be as outlined by the Engineer.

The Contracting Agency reserves the right to refuse to permit the use of material on the basis of a certificate.

**a. Certificate of Analysis:** A Certificate of Analysis shall be notarized and shall include actual test results of material properties. This certificate also includes "Mill Test Reports." A Certificate of Analysis shall be furnished with each lot of material delivered to the work. The lot certified shall be clearly identified on the certificate.



- b. **Certificate of Compliance:** A Certificate of Compliance shall be notarized and shall state that the materials conform with required specifications.

A Certificate of Compliance shall be furnished with each lot of material delivered to the work. The lot certified shall be clearly identified in the certificate.

- c. **Certificate of Delivery:** A Certificate of Delivery shall list particular materials included in the shipment. It may contain statements concerning the materials' conformance to specifications. This certificate also includes a Certificate of Release.

A Certificate of Delivery shall be furnished with each shipment of material delivered to the work.

- 6.05 **Contractor Quality Control:** The Contractor shall provide and maintain an adequate quality control system along with personnel, equipment, supplies, and facilities necessary to obtain samples, perform tests and provide quality control of the work.

The Contractor shall perform quality control sampling, testing and inspection during the work at the rate sufficient to ensure that the work conforms to the project specifications.

- 6.06 **Plant Inspection:** The Engineer may inspect plants and operations producing materials and/or materials at the source. The Contracting Agency reserves the right to retest materials, prior to incorporation into the work, which have been tested and accepted at the source of the supply. If plant inspection is undertaken, the following conditions shall be met:

- a. The Engineer shall have the cooperation and assistance of the Contractor and the producer with whom the Contractor has contracted for materials.
- b. The Engineer shall have entry at all times to such parts of the plant as concern the manufacture or production of materials being furnished.
- c. When required, the Contractor shall arrange for an approved building for the use of the inspector. Such building shall be located conveniently near the plant, independent of any building used by the material producer.

- 6.07 **Foreign Materials:** Materials manufactured outside the United States shall be delivered to approved locations within the State, where they shall be retained until sampling and testing can be completed.

The Contractor shall, at no direct pay, arrange for any required testing which the Contracting Agency is not equipped to perform. Testing by the Contractor shall be performed within the State and be subject to witnessing by the Engineer.

Each lot of foreign material shall be accompanied by a Certificate of Compliance prepared in accordance with Subsection 6.04. Certificates of Analysis prepared in accordance with Subsection 6.04 shall be attached to the Certificate of Compliance for those materials for which Certificates of Analysis are required. These certificates shall clearly identify the lot to which they apply.

Structural materials requiring Certificates of Analysis (Mill Test Reports) will be accepted only from foreign manufacturers who have previously established to the satisfaction of the Engineer the adequacy of their in-plant quality control.

Adequacy of quality control shall be established, at the option of the Engineer, by submission of detailed written proof of adequate quality control or through a plant inspection by the Engineer.

No structural materials will be accepted which cannot be properly identified with Certificates of Analysis and Certificates of Compliance.

**6.08 Material Storage and Plant Site:** Materials shall be so stored as to assure preservation of their quality and fitness for the work. Stored materials, even though approved before storage, may again be inspected prior to their use in the work. Stored materials shall be located to facilitate their prompt inspection. The Contracting Agency may approve portions of the right-of-way to be used for storage and for placing the Contractor's plant and equipment. Additional space required shall be provided by the Contractor at no direct pay. Private property shall not be used for storage or plant site without written permission of the owner and lessee. Copies of such written permission shall be furnished the Engineer. Storage and plant sites shall be restored to a condition acceptable to the owner or lessee by the Contractor at no direct pay. A Certificate of Release, signed by the owner or lessee, shall be furnished to the Engineer.

**6.09 Handling Materials:** Materials shall be handled to preserve their quality and fitness for the work. Materials shall be transported from storage site to the work in tight vehicles constructed to prevent loss or segregation of materials after loading and measurement in order that there will be no inconsistencies in quantities of materials loaded and quantities received at the place of operations.

**6.010 Unacceptable Materials:** Materials not conforming to specifications will be rejected and shall be removed immediately from the work unless otherwise directed. No rejected material, the defects of which have been corrected, shall be used until approval by the Engineer has been given.

**6.011 Contracting Agency-Furnished Material:** The Contractor shall furnish all required materials to complete the work, except those specified to be furnished by the Contracting Agency.

Material furnished by the Contracting Agency will be delivered or made available to the Contractor at the points specified.

The cost of handling and placing materials after they are delivered to the Contractor shall be considered as included in the contract price for the item in connection with which they are used.

The Contractor will be responsible for material delivered. Deductions will be made from payments for the work to make good any shortages and deficiencies, for any damage which occurs after such delivery, and for any demurrage charges.

**6.012 Misplaced Material:** Material that is placed or work that is performed elsewhere than in places designated on the plans, specified herein, or directed by the Engineer, will not be paid for, and the Contractor may be required to remove and deposit such material at his own expense as directed by the Engineer.

## 7.LEGAL RELATIONS AND RESPONSIBILITY TO THE PUBLIC

- 7.01 Laws to be Observed:** The Contractor shall keep informed of and comply with all Federal, State and local laws, ordinances and regulations, and all orders and decrees of bodies or tribunals having any jurisdiction or authority, which affect those employed on the work or which affect the conduct of the work. The Contractor shall indemnify the Contracting Agency, Engineer, and DOTD, and its representatives against any claim or liability arising from violation of any such law, bylaw, ordinance, code, regulation, order or decree, whether by the Contractor or the Contractor's employees.

Soil and soil-moving equipment operating in regulated areas will be subject to plant quarantine regulations. These regulations provide for cleaning soil from equipment before it is moved from regulated areas to prevent spread of harmful agricultural pests from areas quarantined by the State or U.S. Department of Agriculture. Complete information may be obtained from the appropriate district office of the USDA Plant Protection Division.

- 7.02 Permits, Licenses, Taxes and Insurance:** The Contractor shall procure temporary permits and licenses for the work, pay charges, fees, and taxes; and give notices necessary to due and lawful prosecution of the work.

The Contractor shall not begin work under this contract until he has obtained all insurance required by these specifications. This must be evidenced by the contractor furnishing the Contracting Agency with an original policy or a certificate of insurance, which shall provide that the original policy shall not be canceled without 30 days prior written notice to the Contracting Agency. A 30 day notice shall be given to the Contracting Agency by the contractor of any changes contemplated in any of the policies required by these specifications. All insurance must be from companies acceptable to the Contracting Agency. A copy of all insurance documentation shall be furnished to the Engineer. No direct payment will be made for providing the required insurance the cost of which shall be included in the price of mobilization.

Evidence of all insurance as required shall be furnished to the address shown in Notice to Contractors for review by the Contracting Agency.

The Contractor shall maintain at all times during the performance of the work under the contract, the following types of insurance with the specified amounts of coverage:

- a. **Worker's Compensation** in compliance with state law, with the exception that the contractor's Employer liability is to be at least \$1,000,000 when work is to be over water and involves maritime exposures. The insurance company shall waive its right of subrogation. The insurance company shall have no rights of recovery against the contractor, the owner, DOTD, or the engineer. The policy must include an all-states endorsement as well as satisfy the following requirements:  
The policy shall not be cancelled without the permission of the owner. The certificate holder shall be the Contracting Agency. If the insurance is cancelled and another policy is not obtained, the Contracting Agency has the right to obtain a new policy and to charge the contractor for the cost of this policy. The contractor shall be responsible for the deductible.
- b. **Commercial General Liability Insurance** - with a combined single limit per occurrence for bodily injury and property damage. The aggregate loss limit must be on a per project basis. This insurance shall include coverage for bodily injury and property damage, and include coverage for Premises-Operation; Broad form Contractual Liability; Products and Completed Operation; Use of Contractors and Subcontractors; Personal Injury; Broad form Property Damage; and Explosion, Collapse and Underground (XCU) coverage. The required combined single limit amount of insurance shall be as provided in Table 7-1.

- c. A separate **Owner’s and Contractor’s Protective Liability (OCP) Policy** shall be furnished by the contractor naming the Contracting Agency as the named insured. The policy period of the OCP insurance shall extend through final acceptance of the project. The required combined single OCP limit amount shall be as provide in Table 7-1.
- d. **Business Automobile Liability Insurance** – with a combined single limit per occurrence for bodily injury and property damage. This insurance shall include bodily injury and property damage coverage for owned automobiles, hired automobiles and non-owned automobiles. The insurance company shall waive its right of subrogation. The insurance company shall have no rights of recovery against the contractor, the owner, DOTD, or the engineer.

The contractor may wish to get an endorsement for his motorized construction equipment, but this endorsement is considered optional.

The policy shall not be cancelled without the permission of the owner. The certificate holder shall be the Contracting Agency. The contractor shall be responsible for the deductible.

Table 7-1  
Insurance Requirements  
(\$ in millions)

<u>Initial Contract Amount</u>	<u>Occurrence Minimum</u>	<u>Aggregate</u>	<u>Ultrahazardous Aggregate</u>
Up to \$1	\$ 1	\$ 2	\$ 3
From \$1 to \$2	\$ 2	\$ 4	\$ 6
Over \$2	\$ 5	\$ 10	\$ 15

- e. **Maritime Insurance** - The contractor shall carry \$1,000,000.00 in coverage as required under the Longshoreman’s and Harbor’s Compensation Act or the Jones Act for Seaman for all work not covered under the Workmen’s Compensation laws.

The policy shall not be cancelled without the permission of the owner. The certificate holder shall be the Contracting Agency. If the insurance is cancelled and another policy is not obtained, the Contracting Agency has the right to obtain a new policy and to charge the contractor for the cost of this policy. The contractor shall be responsible for the deductible.

- f. **Builder’s Risk Insurance** - The policy shall be the completed value coverage and shall be issued by a surety that waives subrogation. The insurance company shall have no rights of recovery against the Contractor, the owner, DOTD, or the Engineer. The policy shall be written for the full value of the project, less the cost of foundations.

The policy shall not be cancelled without the permission of the owner. The certificate holder shall be the Contracting Agency. If the insurance is cancelled and another policy is not obtained, the Contracting Agency has the right to obtain a new policy and to charge the contractor for the cost of this policy. The Contractor shall be responsible for the deductible.

All losses shall be paid to the owner, the Contractor, and the Engineer as the case may dictate. All claims paid shall include the Contracting Agency as named insured as trustee for insured’s to receive payment.

- g. **Insurance Payment** - All insurance premiums paid by contractor shall be included under bid item Mobilization.

Aggregate coverage for projects with ultrahazardous activities shall be triple the occurrence minimum. Ultrahazardous activities include piledriving; transportation, use, storage, or removal of explosives, radioactive materials, or particularly hazardous or volatile chemicals; and asbestos or lead paint abatement; but does not include vibratory installation of sheet piles.

Each policy shall include provisions stipulating that the insurance company(ies) shall have no recourse against the State of Louisiana and the Department for payment of any premiums or for assessments under any form of the policy and that any and all deductibles in the above described insurance policy(ies) shall be assumed by and be at the sole risk of the contractor.

Insurance is to be placed with insurance companies authorized in the State of Louisiana with an A. M. Best's rating of A-: VI or higher. This rating requirement may be waived for Workers Compensation coverage only.

Should any policies be canceled, the contractor shall immediately notify the Contracting Agency.

Upon failure of the contractor to furnish, deliver and maintain such insurance for itself as required, this contract, at the election of the Contracting Agency, may be immediately declared suspended, discontinued or terminated. Upon failure of the contractor to maintain OCP insurance at any time prior to final acceptance of the project, work on this contract shall be immediately suspended until proof of such insurance is presented to and accepted by the Contracting Agency. During a suspension caused by the lack of any required insurance, contractual time charges will continue to be assessed against contract time, as will any assessment of stipulated damages, without interruption.

Failure of the contractor to maintain any required insurance shall not relieve the contractor from any liability under the contract, nor shall the insurance requirements be construed to conflict with the obligations of the contractor concerning indemnification under 7.17.

The contractor is responsible for requiring and verifying that all subcontractors working on the project maintain appropriate types and levels of insurance coverage.

This contract does not authorize or appoint contractor as an agent or mandatory of the Contracting Agency, or of the State of Louisiana. Accordingly, the contractor is subject to and responsible for all taxes incurred in the performance of its contractual obligations.

**7.02.1 Reimbursement of OCP Insurance:** Contractor may submit the direct cost of OCP insurance (only) for reimbursement under Mobilization.

The Department will reimburse the actual cost of OCP coverage, with no allowed mark-up, as shown on an invoice produced by the insurance provider. Contractor must also submit an original sworn affidavit from the insurance producer/agent in which that person attests that the submitted invoice is for the required OCP coverage only, and that the invoice accurately reports the cost to contractor of that coverage. The invoice and affidavit may be submitted at the preconstruction conference or thereafter for inclusion with a partial estimate.

There will be no reimbursement for any purchase of OCP insurance policy extensions necessitated by concurrent; non-excusable; or excusable, non-compensable delays in completion of the project, whenever such delays occur, or for claimed utility delays where such days were not added to Contract Time by change order. Any policy extensions necessitated by excusable, compensable delays will be reimbursed on a pro-rata monthly.

**7.03 Patented Devices, Materials and Processes:** If the Contractor uses any design, device, material or process covered by patent or copyright, the Contractor shall provide for such use by legal agreement with the owner of the patent or copyright. The Contractor and surety shall indemnify the Contracting Agency, Engineer, and DOTD, any affected third party or political subdivision from claims for infringement due to the use of any such patented design, device, material or process, or any trademark or copyright and shall indemnify the State for any costs, expenses and damages due to any infringement during prosecution or after completion of the work.

If the contractor submits proposed plans, specifications, manufacturer's data, or any other information or documents to the Contracting Agency for a proposed change order, value engineering proposal or for any other purpose which may be protected by copyright or trade secret protection, the contractor shall first obtain permission or license from the licensor or any other party having a proprietary interest in such documents or information and shall hold harmless, indemnify and defend the Contract Agency at the contractor's sole cost from any damages, expenses or actions arising out of or related to use by the Contract Agency of information or documents supplied by the contractor to the Contracting Agency.

**7.04 Sanitary, Health and Safety Provisions:** The Contractor shall provide and maintain in a neat, sanitary condition, restrooms and other such accommodations for use of employees and the Engineer and/or Inspector. Such facilities shall comply with requirements of the State and local Boards of Health or other bodies or tribunals having jurisdiction.

The Contractor shall not require any worker to work under conditions which are unsanitary, hazardous or dangerous to health or safety. The Contractor shall maintain the work in a sanitary, safe and nonhazardous condition.

Disposal of sewage shall be as approved by the appropriate health agency.

The contractor shall comply with all Occupational Safety and Health Administration (OSHA) regulations.

If the contractor provides an Emergency, Health and Safety (EHS) plan during the preconstruction conference, all Contracting Agency and Engineer employees assigned to the project shall comply with the plan while on or adjacent to the job site. The contractor shall not be liable under 7.17 for bodily injuries, death, or damages sustained by the Contracting Agency and Engineer, or by any Contracting Agency and Engineer's employee, due directly to the Contract Agency and Engineer's employee's failure to abide by the EHS plan provided by the contractor.

**7.05 Public Convenience and Safety:** The Contractor shall conduct the work to assure the least possible obstruction to traffic. The project site and haul route shall be kept reasonably free from dust and in such condition that the public can travel in safety.

When the road under construction is to be kept open for traffic, the subgrade and surfacing shall be kept reasonably free from dust and in such condition that the public can travel in safety. Safety and convenience of the general public and the residents along the work, and protection of persons and property, shall be a primary responsibility of the Contractor.

When the Contractor works at night, adequate artificial lighting, signs, flaggers or other traffic controls shall be provided to protect workers, the work and the traveling public. When such work affects traffic safety, the Contractor shall submit to the Engineer for approval a plan of lighting, signing, flagmen or other traffic controls. If the approved plan proves inadequate after work begins, the Contractor shall make such changes as directed. If the Engineer finds that the night work is so hazardous as to preclude the beginning or require the discontinuing of such work, the Contractor shall immediately cease all such operations. Costs of providing or making changes in the lighting, signs, flaggers or other traffic controls shall be the responsibility of the Contractor.

**7.06 Railway-Highway Provisions:** All work to be performed by the Contractor in construction on railway right-of-way shall be in accordance with the applicable permit, copy available from the Contracting Agency.

It is the Contractor's responsibility to contact the railroad to determine the railroad's requirements for work within the railroad right of way and to comply with those requirements. The Contractor shall attend any safety orientation/training required by the Railroad.

All work to be performed by the contractor in construction on railway right-of-way shall be at a minimum in accordance with the following provisions.

1. The contractor shall notify the Railway's duly designated representative at least 10 days in advance of the date on which the contractor is expected to begin work on the Railway's premises.

2. During the progress of work on or about the Railway's tracks or premises, the contractor shall maintain contact and liaison with the Railway's officers or representatives designated by the Railway and Railway approved contractors so as to ascertain time of passage of trains at the work in order to clear Railway's tracks and facilities of people, equipment and obstructions to permit free flow of railway traffic. The contractor shall perform work on the Railway's premises without materially interfering with the Railway's tracks, structures and facilities or operations, or the operations of the Railway's tenants or licensees, or with communication and signal lines upon said premises, except under documented arrangement effected between the contractor and the Railway. The Contractor shall ensure all Railroad signals are returned to working order and all electronic/electrical equipment is functioning as intended before conclusion of the project work. The contractor shall protect the Railway's property and avoid accidents. The contractor shall keep the Railway's track and roadbed free of earth, rock, construction materials, debris and obstructions. The contractor shall immobilize equipment parked near the Railway's track, when such equipment is unattended, to prevent its movement by unauthorized persons.

3. The contractor shall, before entering upon the Railway's right-of-way for performance of any construction work, or work preparatory thereto, secure permission from the Railway's representative for the occupancy and use of the Railway's right-of-way outside the limits of the highway servitude area and shall confer with the Railway relative to requirements for railway clearances, operation and general safety regulations.

4. The Railway's representative will at all times have jurisdiction over the safety of railway operation. The decision of the Railway's representative as to procedures which may affect the safety of railway operation shall be final. The contractor shall be governed by such decision.

8. Should any damage occur to railway property, as a result of the contractor's unauthorized or negligent operations, and the Railway deems it necessary to repair such damage or perform work for protection of its property, the required materials, labor and equipment shall be furnished by the Railway. The contractor shall reimburse the Railway for costs incurred.

6. If the contractor's methods or equipment requires access across the Railway's right-of-way and tracks at any location which is not an existing permanent type of open public railway-highway crossing in or incident to the construction of the project, the contractor shall contact the Railway and request access across said right-of-way and tracks and execute a license agreement with the Railway, all at no direct pay. The contractor shall reimburse the Railway for the cost of providing and removing any temporary at-grade and grade-separated structure access crossing, including warning devices, watchmen expense or other costs which the Railway deems necessary for protection of Railway property and operations. The type of temporary crossing required shall be determined by the Railway. The contractor shall not cross the Railway's right-of-way and tracks with vehicles or equipment except at existing open public road crossings or at such crossings established pursuant to this paragraph. The foregoing requirements include new grade crossings which will become part of the finished highway being constructed under the contract. The contractor shall

comply with requirements for insurance in 7.06.14 below during operations hereunder. The contractor shall cooperate with the Railway during all phases of the work including sufficient advance notice for project completion in order for the Railway to remove the temporary grade crossing and perform final grade crossing improvements and/or inspections under the agreement with the Contracting Agency prior to final acceptance.

7. Any engineering, inspection, training, flagging, and watcher service required by the Railway for the safety of Railway operations because of work being performed by the contractor or in connection therewith, shall be provided by the Railway and the cost thereof shall be reimbursed to the Railway, by the contractor, on the basis of the Railway's bills, to be rendered monthly. The contractor will be reimbursed, by the Contracting Agency, for its actual incurred cost for such services with no contractor mark-up allowed. The contractor shall furnish documentation of railway invoices and evidence of payment before reimbursement. When it is determined that railroad services and/or crossings are no longer in the best interest of the Contracting Agency, the contractor will be issued written notification that no further reimbursement will be made by the Contracting Agency for railroad services. Work done or services provided for the contractor's convenience will not be reimbursed by the Contracting Agency.

Any engineering, inspection, training, flagging, and/or watcher service required by the Railway for the safety of Railway operations because of work being performed by the contractor, or in connection therewith, and which the Railway requires that the contractor provide will be reimbursed by the Contracting Agency at the actual incurred cost for such services with no contractor mark-up allowed. The contractor shall furnish documentation of railway invoices and evidence of payment before reimbursement by the Contracting Agency. The contractor shall notify the Railway 72 hours in advance of when railway services are required.

8. The contractor will be required to reimburse monthly the Railway for the cost of all services performed by the Railway for the contractor, and furnish the Contracting Agency satisfactory evidence that the Railway has acknowledged receipt of payment before final acceptance.

9. During construction of piers or other supports or structures adjacent to any track or of drainage pipe or structure under or adjacent to any track of the Railway, the contractor shall make adequate provisions against sliding, shifting, sinking or in any way disturbing the railway embankment and track adjacent to said piers, supports or structures due to construction operations by driving temporary sheeting or by other means satisfactory to the Department and Railway.

10. Before commencing work on any pier or structure adjacent to any track, or on any structure and parts thereof which carry Railway facilities, the contractor shall submit to the engineer, prints of the proposed sheeting, shoring, bracing and falsework details for protection of the Railway's track and embankment and shall submit prints of the shop drawings or other contractor's detailed plans for structures and parts thereof which will carry Railway facilities. This submittal shall include proposed methods of construction and be accompanied by supporting data, including design computations, soil descriptions and other pertinent information.

After acceptance by the engineer, four prints of the above plans, shop drawings and details bearing the seal of a registered Civil Engineer, with supporting data and documents, shall be forwarded to the Railway for approval. Prior to beginning work on Railway right-of-way, the shop drawings and details, with supporting data and documents, shall be approved by the Railway.

11. The contractor shall possess the required Railroad permits and notify the Railway's representative in writing at least one week in advance of the proposed time of the beginning of construction of piers, supports or structures adjacent to the track or of drainage pipe or structure under or adjacent to the track.



12. The following temporary clearances are the minimum which shall be maintained during construction operations:

Vertical: 22.5 feet above top of highest rail.

Horizontal: 10.0 feet from centerline of the nearest rail measured at right angles thereto.

If lesser clearances are required for any part of the work, the contractor shall secure written authorization from the Railway's representative for such lesser clearances in advance of the start of work on that portion of the project along, on, over, under or across the right-of-way or tracks of the Railway.

13. The contractor shall not store or construct falsework or store materials, supplies or equipment closer than 15.0 feet from the centerline of the nearest rail, measured at right angles thereto, or 22.5 feet vertically from top of rail.

14. Unless otherwise specified by special provisions or waived by the railroad, the contractor shall provide insurance of the following kinds and amounts:

14.1. Regular Contractor's Public Liability and Property Damage Insurance, including automobile, issued in the name of the contractor shall be written to furnish protection to the contractor respecting operations in performing work covered by the contract in regard to the liability with respect to bodily injury to or death of persons, and injury to or destruction of property, which may be suffered by persons other than the contractor's employees as a result of operations in connection with construction of highway projects located wholly or partly within railroad right-of-way.

14.2. When a contractor sublets a part of the work on any project to a subcontractor, the contractor shall be required to secure insurance protection in the contractor's own behalf under Contractor's Public Liability and Property Damage Insurance policies to cover any liability imposed on the contractor by law for damages due to bodily injury to or death of persons and injury to or destruction of property as a result of work undertaken by such subcontractors.

In addition, the contractor shall provide for, and on behalf of, any such subcontractors protection to cover like liability imposed upon the latter as a result of their operations by means of separate and individual Contractor's Public Liability and Property Damage policies. As an alternative, each subcontractor shall provide satisfactory insurance as described herein on the subcontractor's own behalf to cover the subcontractor's individual operations.

14.3. Railroad Protective Liability Insurance shall be purchased on behalf of the Railway by the contractor. The standards for Railroad Protective Liability Insurance shall be in accordance with provisions of the Federal-Aid Policy Guide (FAPG) Part 646 as amended. Proof of Railroad Protective Liability Insurance, with the policy period effective until final acceptance of the project, must be submitted in accordance with 103.06.

The limits of liability for the kinds of insurance required above shall be as follows:

**RAILROAD INSURANCE COVERAGE (other than AMTRAK)**

**(1), (2) and (3)**

Combined Single Limit for Bodily Injury Liability, Property Damage  
Liability and Physical Damage to:  
Property - \$2,000,000 per occurrence  
Aggregate Limit - \$6,000,000 for the term of the policy

**AMTRAK COVERAGE**

**(1), (2) and (3)**

Combined Single Limit for Bodily Injury Liability, Property Damage

Liability and Physical Damage to:

Property - \$6,000,000 per occurrence

Aggregate Limit - \$12,000,000 for the term of the policy

The name of the Railway and the ratio of the estimated cost of operations within the Railway's property to the total estimated project cost, expressed by percent, will be specified in the project specifications. No direct payment will be made for providing the required insurance coverage by the contractor.

15. The insurance specified shall be kept in force until final acceptance of the contract. Proof of Insurance is required at the project site anytime work is in progress on or near the Railroad.

16. The contractor shall indemnify the Railway, its officers and employees from all suits, actions, or claims brought because of injuries or damages sustained by any person or property due to operations of the contractor; due to negligence in safeguarding the work; or use of unacceptable materials in constructing the work; or any negligent act, omission or misconduct of the contractor; or claims or amounts recovered from infringements of patent, trademark, or copyright.

17. Upon completion of the work, the contractor shall, within 10 calendar days, remove from within the limits of the Railway's right-of-way all machinery, equipment, surplus materials, falsework, rubbish, or temporary buildings of said contractor, and restore the Railway's premises substantially to their former condition or documented proposed conditions agreed upon by the Railroad, Department, and Contractor as satisfactory to the Railway's representative.

Should the contractor fail to make such removal and restoration within 10 calendar days, the Railway shall have the right to make such removal or restoration. The expense incurred shall be chargeable to the project on the Railway's force account statement and the Department will reimburse the Railway for such work. The amount will be deducted from payments due the contractor.

All costs incurred under this subsection, other than as provided in 7.06.7, or for which payment is elsewhere provided, shall be included in the contract prices of other pay items.

Prior to final acceptance of the project, the contractor shall secure a Certificate of Final Inspection and Payment, as found on the Department's website, signed by both the Department representative and a duly authorized railroad company representative, and furnish same to the Department stating that the contractor has satisfactorily restored the Railway's premises and has completed payments for all railway services performed for the contractor's account. If the contractor is unable to secure a Certificate of Final Inspection and Payment from the Railway, the contractor shall submit to the engineer an executed Contractor's Sworn Railroad Affidavit, in which the Contractor warrants (1) the work the Contractor performed on railway right-of-way; (2) that, despite a diligent effort, the Contractor was unable to acquire the Certificate of Final Inspection and Payment from the railroad company; (3) that all work on railway right-of-way complies with and conforms to all contract documents and railway requirements; (4) that the Contractor has made all payments and reimbursements required by the railroad company and its respective right-of-access agreement; (5) that the Contractor has removed all his machinery, equipment, materials, falsework, rubbish, and temporary structures from railway right-of-way and has returned or restored railway property to a condition equal to or better than its former condition.

In addition, on said affidavit, the Contractor shall agree to (1) indemnify, defend, and hold the Contracting Agency, Department and Engineer harmless from and against all claims, demands, causes of action, or rights of action arising from or related to any negligent or intentional act, omission, or misconduct of the contractor on the railway right-of-way, and (2) in the event of a claim or legal action asserting liability covered by the

Contractor's Sworn Railroad Affidavit, regardless of the merits of the claim or legal action and whether or not the Contracting, Department and Engineer is cast in judgment based on such a claim or legal action, the Contractor agrees to indemnify the Contracting Agency, Department and Engineer in the amount of any litigation related costs, including, without limitation, attorneys' fees and expert witness fees and costs, incurred by the Contracting Agency, Department and Engineer in connection with such a claim or legal action covered by the Contractor's Sworn Railroad Affidavit.

**7.07 Navigable Waters and Wetlands:** All work in, over or adjacent to navigable waters or wetlands shall be conducted in accordance with rules and regulations of the U.S. Army Corps of Engineers and U.S. Coast Guard.

Navigable clearances on waterways shall not be infringed upon, and existing navigable depths shall not be impaired except as allowed by permits issued by the responsible agency.

The Contracting Agency will obtain a permit from the U.S. Coast Guard and U.S. Army Corps of Engineers relative to approval of construction plans for bridges, causeways, embankments, dredging, spoil disposal, etc., or work in navigable waters or wetlands. The Contractor will be furnished a copy of the permit and shall comply with all provisions and conditions of the permit.

The Contractor shall prepare reproducible drawings complying with the standards of the U.S. Coast Guard and the U.S. Army Corps of Engineers showing falsework construction, test piles or other temporary pile driving operations, erection sequence, temporary navigational lighting, location of equipment and barges in the navigable limits and other drawing required by the permit agencies. Drawing sizes shall be 8-by-10 ½ inches with a 1-inch border on the top or short side. The drawings shall be submitted to the Engineer for approval and transmittal to the appropriate agency. Construction of falsework, test pile operations and erection or operation of construction equipment within the navigable limits shall not commence until drawings are approved.

The Contractor shall display lights on equipment operating, berthed or moored in navigable streams, and provide temporary navigational lighting on temporary and permanent construction in the navigable limits as required by the U.S. Coast Guard.

Should the Contractor sink, lose or throw overboard any material, machinery or equipment which may be dangerous to navigation, it shall be immediately removed or recovered by the Contractor. The Contractor shall give immediate notice of such obstruction to proper authorities and, if required, shall mark or buoy such obstruction until it is removed.

The Contractor shall not deposit excavated material into the waterway or wetland without a permit from the appropriate agency.

All operations in connection with the work shall be in accordance with permits, rules and regulations of the U.S. Army Corps of Engineers and the U.S. Coast Guard. Deviations therefrom shall be only by special permission or special permit which shall be the responsibility of the Contractor. Failure of the Contractor to become familiar with the terms, conditions and provisions of the permits, rules and regulations applicable to the work shall not relieve the Contractor of responsibility under the contract.

The Contractor shall conduct operations to cause minimum interference with marine operations. If such interference is necessary, the Contractor shall notify the Engineer, in writing, sufficiently in advance so that the Contracting Agency may obtain approval from the U.S. Coast Guard at least 3 weeks prior to said interference.

Copies of Contracting Agency obtained permits are available from the Engineer. Copies of any special permits obtained by the Contractor shall be submitted immediately to the Engineer.

**7.08 Barricades and Warning Signs:** The Contractor shall provide, erect and maintain necessary barricades, suitable lights, danger signals, signs and other traffic control devices, including flaggers, and shall take all necessary precautions for protection of the work and safety of the public. Roads closed to traffic shall be protected by effective barricades. Obstructions shall be illuminated at night. Suitable warning signs shall be provided to direct traffic.

The Contractor shall erect and maintain warning signs in advance of any place on the project where operations may interfere with traffic and at intermediate points where new work crosses or coincides with an existing road.

Barricades, warning signs, light, temporary signals and other protective devices shall conform to the details shown on the plans and the MUTCD.

**7.08.1 Certification:** Prior to installation, the contractor shall furnish the engineer a listing of all the Category II and III devices to be used on the project, including a reference to the FHWA Work Zone letter number for each device. FHWA letters of approval shall serve as verification that these devices comply with the crash testing requirements of NCHRP Report 350 or MASH. Provide a certificate of compliance indicating the producer/supplier code for all barricades and warning signs delivered to the project.

**7.09 Use of Explosives:** Explosives shall not be used without written approval. When explosives are used, the Contractor shall not endanger life or property. The use of explosives shall be in compliance with all laws and ordinances. The Contractor shall be responsible for all damage resulting from the use of explosives.

Explosives shall be securely stored, in compliance with all laws and ordinances. Such storage places shall be clearly marked. When no local laws or ordinances apply, satisfactory storage shall be provided not closer than 1,000 feet from any road, building or place of human occupancy.

The Contractor shall notify, in writing, each utility company and affected property owner having facilities in proximity to the site of work of the intention to use explosives. Such notices shall be given sufficiently in advance to enable them to protect their property from damage.

**7.010 Preservation of Property, Landscape, and Survey Monuments:** The Contractor shall be responsible for preservation of public and private property and shall protect from disturbance and damage all land monuments, property line markers or horizontal and vertical control monuments such as those established by the U.S. Coast and Geodetic Survey, National Geodetic Survey, Louisiana Geodetic Survey, Louisiana DOTD, Corps of Engineers, U.S. Geological Survey, or the Engineer.

Before removing and resetting any survey monuments, the Contractor shall give sufficient advance notice, in writing, to the appropriate agency responsible for the monument and to the Engineer of the intention to perform the work so that such agency may have a representative present if it so desires. The Contractor shall not disturb or move any such monument without approval. The Engineer will designate the location and manner in which these monuments are to be reset.

The Contractor shall be responsible for damage to property during the work due to any negligent act, omission or misconduct in executing the work, or due to defective work or materials. This responsibility will not end until final acceptance.

When damage is done to public or private property by the Contractor due to negligent act, omission or misconduct in execution of the work, or in consequence of non-execution thereof by the Contractor, such property shall be restored at no direct pay by the Contractor, to a condition similar or equal to that existing before such damage was done, by repairing, rebuilding or otherwise acceptably restoring as directed, or make good such damage in an acceptable manner.

**7.011 Forest Protection:** In carrying out the work within or adjacent to State of National Forests, the Contractor shall comply with all regulations of the Department of Public Safety Office of the State Fire Marshall Department of Wildlife and Fisheries/Wildlife Division, and the Department of Agriculture and Forestry or other authority having jurisdiction governing protection of forests and performance of work within forests. The Contractor shall observe all sanitary laws and regulations with respect to performance work in forest areas. The Contractor shall keep the areas in an orderly condition, dispose of all refuse, and obtain permits for construction and maintenance of all construction camps, stores, warehouses, residences, latrines, cesspools, septic tanks and other structures in accordance with requirements of the forest supervisor.

The Contractor shall take reasonable precaution to prevent and suppress forest fires and shall require employees and Subcontractors, both independently and at the request of forest officials, to do all reasonable within their power to prevent and suppress forest fires and to notify a forest official at the earliest possible moment of the location and extent of any fire seen by them.

**7.012 Prevention of Soil Erosion and Water Pollution:** The Contractor shall protect the project and adjoining properties from soil erosion and siltation by effective and continuous erosion control methods. The area of bare soil exposed by construction operations shall be kept to a minimum.

**7.013 Environmental Protection:** The Contractor shall comply with federal, state and local laws and regulations controlling pollution of the environment, including air, water and noise. The Contractor shall take precautions to prevent pollution of waters and wetlands with fuels, oils, asphalts, chemicals or other harmful materials and to prevent pollution of the atmosphere from particulate and gaseous matter.

The contractor certifies under penalty of law that he understands and will abide by the terms and conditions of the Storm Water Pollution Prevention Plan (SWPPP) and the National Pollution Discharge Elimination System (NPDES) General Permit that require the discharges from construction sites be managed to prevent pollutants from entering waters of the United States in accordance with the Environmental Protection Agency's (EPA) regulations for storm water discharges with respect to 33 U.S.C. ~ 1342 (Section 402 (p) and 405 of Public Law 100-4).

The use of erosion control features or methods other than those in the contract shall be as directed.

The Storm Water Pollution Prevention Plan shall be comprised of all components specified in the U.S. Environmental Protection Agency document entitled, "Storm Water Management for Construction Activities".

**The contractor is advised that if a Storm Water Pollution Prevention Plan (SWPPP) is not incorporated into the plans and specifications, the Contractor will be required to develop a SWPPP plan before the start of construction.**

Construction operations in rivers, streams, lakes, tidal waters, reservoirs, canals and other impoundments will be restricted to areas where it is necessary to perform filling or excavation to accomplish the work and areas which must be entered to construct temporary or permanent structures. As soon as conditions permit, streams and impoundments shall be cleared of obstructions placed therein or caused by construction operations.

Frequent fording of streams with construction equipment will not be permitted.

No residue from dust collectors or washers shall be dumped into a stream.

Attention is further directed to the federal, state and local air pollution control programs and their rules and regulations regarding air pollution, especially open burning, fugitive dust, asphaltic concrete plant restrictions.

The Contractor shall maintain and operate equipment to minimize noise. Engines shall be equipped with properly functioning mufflers. The Contractor shall limit activity near noise sensitive areas, such as churches, hospitals and schools, so normal activities are not unduly disrupted.

**7.014 Air Navigation:** The Contracting Agency will obtain a permit (or a determination of no hazard to air navigation) from the FAA for all permanent structures, if needed. The Contractor will be furnished a copy of the permit, if requested. If the Contractor's equipment, falsework, etc. is classified as a hazard to aerial navigation, the Contractor shall prepare, on tracing cloth or approved reproducible medium, drawing complying with the FAA current requirements for temporary lighting for protection of aerial navigation. These drawings shall be submitted to the Engineer for review and transmittal to the FAA for approval. Operations in connection with the work for protection of aerial navigation shall be in accordance with the approved drawings and applicable federal regulations. Failure of the Contractor to be familiar with applicable rules and regulations of the FAA will not relieve the Contractor of responsibility under the contract.

**7.015 Hazard Zones:** If any portion of the work is determined to be within a known hazard zone, the presence of such hazards will be noted in the plans or project specifications by the Engineer to the extent that definite information can be obtained on these situations.

It shall be the responsibility of the Contractor to arrange with the agency concerned for any adjustments relative to the work in the area. Any liability or expense of these arrangements shall be borne by the Contractor.

The Contractor shall submit to the Engineer a Release Form signed by the agency involved stating that the Contractor has satisfactorily discharged the obligations under terms of the arrangements. This form shall be submitted with the required signatures.

Failure of the Contracting Agency to determine the presence of all hazards and to so note in the plans or project specifications shall not relieve the Contractor of performing the work in accordance with the project requirements at contract unit prices.

**7.016 Damage Claims:** The Contractor shall indemnify the Contracting Agency, the Engineer and DOTD, their officers, employees, consultants and agents from all suits, actions or claims brought because of injuries or damage sustained by any person or property due to operations of the Contractor; due to negligence in safeguarding the work; or use of unacceptable materials in constructing the work; or any negligent act, omission or misconduct of the Contractor; or claims or amounts recovered from infringements of patent, trademark or copyright; or from claims or amounts arising or recovered under the Workmen's Compensation Act or other law, ordinance, order or decree. Money due the Contractor under the contract as considered necessary by the Contracting Agency for such purpose, may be retained for its use. In case no money is due, the surety bond may be held until such suits, actions, claims for injuries or damages have been settled and suitable evidence to that effect furnished to the Contracting Agency; except that money due the Contractor will not be withheld when the Contractor produces satisfactory evidence that adequate Workman's Compensation, Public Liability, and Property Damage Insurance, as required are in effect.

**7.017 Contractor's Responsibility for Work:** Until final acceptance, the Contractor shall have the charge and care thereof and shall take every precaution against damage to any part thereof by action of the elements, vandalism, theft or from other cause, whether arising from execution or non-execution of the work. The Contractor shall rebuild, repair, restore or make good damages, including theft and vandalism, to the work before final acceptance and shall bear the expense thereof, except damage to the work due to unforeseeable causes beyond the control of the Contractor, including but not restrict to acts of God or governmental agencies.

In case of suspension of work, the Contractor shall be responsible for the project. The Contractor shall take such precautions as necessary to prevent damage to the project, provide for normal drainage and erect any necessary temporary structures, signs or other facilities at no direct pay. During such period of suspension, the Contractor shall acceptably maintain all living material in newly established plantings, seeding and soddings furnished under the contract, and shall take adequate precautions to protect new tree growth and other important vegetative growth against damage.

- 7.018 Utility Property and Services:** The Contractor's operations adjacent to properties of railway and utility companies or adjacent to other property, damage to which might result in considerable expense, loss or inconvenience, shall not commence until after all arrangements necessary for the protection thereof have been made.

The Contractor shall cooperate with owners of utility lines in their removal and rearrangement, in order that these operations may progress in a reasonable manner, that duplication of rearrangement work may be minimized and that services rendered by those parties will not be unnecessarily interrupted.

In the event of interruption of utility services due to accidental breakage or being exposed or unsupported, the Contractor shall promptly notify the proper authority and shall cooperate with such authority in restoration of service. If utility service is interrupted, continuous cooperation will be required until service is restored. No work shall be undertaken around fire hydrants until provisions for continued service have been approved by the local fire authority.

- 7.019 Furnishing Right-of-Way:** The Contracting Agency will be responsible for securing all necessary rights-of-way, servitudes and easements in advance of construction.

- 7.020 Personnel Liability of Public Officials.** In carrying out the provisions of these specifications, or in exercising any authority granted to them by the contract, there shall be no liability upon the Contracting Agency, the Department and Engineer, or their authorized representatives, either personally or as officials of the State, it being understood that in all such matters they act solely as representatives of the State.

- 7.021 No Waiver of Legal Rights:** Upon completion of the work, the Engineer will make final inspection and notify the Contractor of acceptance. Such final acceptance shall not prevent the Engineer from correcting any measurement, estimate or certificate made before or after completion of the work, nor shall the Contracting Agency be prevented from recovering from the Contractor or the surety, or both, such overpayment it may sustain by failure of the Contractor to fulfill obligations under the contract. A waiver by the Contracting Agency of any breach of any part of the contract shall not be a waiver of any other breach.

The Contractor, without prejudice to the terms of the contract, shall be liable to the Contracting Agency for latent defects, fraud or such mistakes as amount to fraud, or as regards the Contracting Agency's rights under any warranty or guaranty.

- 7.022 Third Party Liability:** It is agreed between the parties executing the contract that it is not intended by any provisions of the contract to create the public nor any member thereof a third party beneficiary hereunder, nor to authorize anyone not a party to this contract to maintain a suit for personal injuries or property damage pursuant to the contract.

- 7.023 Antitrust Violations:** By execution of the contract, the Contractor conveys to the Contracting Agency all rights, title and interest in and to all causes of action it may acquire under Federal and State anti-trust laws, relating to the goods or services purchased by the Contracting Agency pursuant to the contract.

- 7.024 Archeological and Historical Findings:** If the Contractor encounters cultural artifacts or archeological or historical sites, operations shall be discontinued and he will immediately notify the Engineer. The Engineer

will contact the proper authorities in order that an appropriate assessment may be made to determine the disposition thereof and necessary actions relative to the site. When directed, the Contractor shall excavate the site to preserve the artifacts encountered. Such excavation will be paid for as extra work, including an appropriate adjustment in contract time. Borrow and muck disposal areas furnished by the Contractor will be subject to such assessment prior to use.



## 8. PROSECUTION AND PROGRESS

- 8.01 Subletting of Contract:** The Contractor shall not sublet any portion of the contract without written consent from the Contracting Agency, including work sublet to an authorized Disadvantaged Business Enterprise. If such consent is given, the Contractor will be permitted to sublet a portion of the work, but shall perform with the Contractor's own organization work amounting to at least 50 percent of the total contract cost. Work as defined in this Subsection will not include materials. Any items designated in the contract as "Specialty Items" may be performed by subcontract and the cost of such may be deducted from the total cost before computing the amount of work required to be performed by the Contractor with the Contractor's own organization. No subcontract shall relieve the Contractor of liability under the contracts and bonds.

The contractor shall indemnify the Contracting Agency, the Department and Engineer, its officers, and employees from any loss of any kind, including loss of funding, resulting from its failure to perform at least 50 percent of the total contract cost, as provided above.

By executing the contract, contractor acknowledges and agrees that a subcontract shall incorporate all applicable requirements and provisions of the contract between it and the Contracting Agency, including the insurance requirements in 7.02, and that subcontracts do not relieve contractor of any of its obligations, liabilities, or guarantees under this contract or included bonds.

A Subcontractor shall not further subcontract to a third party any portion of this authorized work.

- 8.02 Commencement of Work:** The "Notice to Proceed" will stipulate the date on which the Contractor shall begin work, which date shall be the beginning of contract time charges.

- 8.03 Construction Progress Schedule:** Prior to beginning the work the Contractor shall submit to the Engineer a Construction Progress Schedule giving a satisfactory schedule of operations that provides for completion of the work within the contract time. This schedule shall be on the prescribed bar graph form and shall allocate the entire contract time. The Contractor shall have copies of the schedule available at the preconstruction conference.

If the Contractor's operations are affected by changes in the plans or amount of work, or if the Contractor has failed to comply with the approved schedule, or if requested by the Engineer, the Contractor shall submit a revised Construction Progress Schedule for approval. This revised schedule shall show how the Contractor proposes to prosecute the balance of the work. If a revised schedule has been requested by the Engineer, the Contractor shall submit the revised schedule within 14 calendar days after the date of request or progress payments may be withheld.

The approved Construction Progress Schedule will be used as the basis of establishing the controlling item of work, charging contract time and as a check on the progress of the work. The Construction Progress Schedule shall show only one controlling item of work for each contract day. If the Construction Progress Schedule has not been approved prior to the issuance of the Notice to Proceed, the Engineer will establish the controlling work item and charge contract time accordingly.

- 8.04 Prosecution of Work:** The Contractor shall provide sufficient materials, equipment and labor to complete the project in accordance with the contract and within the contract time. If the completed work is behind the approved progress schedule, the Contractor shall take immediate steps to restore satisfactory progress. Each item of work shall be prosecuted to completion without delay. The Contractor shall not transfer equipment or forces from uncompleted work without prior notice to, and approval of, the Engineer. If prosecution of the work is discontinued for an extended period of time, the Contractor shall give the Engineer written notice at least 24 hours before resuming operations.

The contractor's progress will be determined monthly at the time of each partial estimate, and will be based on the total amount earned by the contractor as reflected by the partial estimate. If the contractor's progress is more than 20 percent behind the elapsed contract time, the contractor will be notified that disqualification may occur if progress becomes delinquent by more than the percentages specified. Such additional notification will be made as deemed necessary concerning the progress delinquency of the contractor.

Prior to the elapsing of 55 percent of the contract time, the contractor will be disqualified if progress is more than 40 percent behind the elapsed contract time. After 70 percent of the contract time has elapsed, the contractor will be disqualified if progress is more than 25 percent behind the elapsed contract time. Disqualification will be applied between 55 and 70 percent contract time elapsed on the pro-rata basis; for example, when 60 percent of the contract time has elapsed, the contractor will be disqualified if progress is more than 35 percent behind the elapsed behind the elapsed contract time.

During the period of disqualification, the Contracting Agency may prevent the contractor from bidding on contracts or be approved as a subcontractor on future contracts with the Contracting Agency. Any bid submitted by the contractor during the period of disqualification will not be considered and will be returned. The period of disqualification will continue until the completed work on the contract is within the foregoing percentages or until all work on the contract has been satisfactorily completed. The Contracting Agency will still have its rights concerning the assessment of stipulated damages as specified under Section 8.08.

**8.05 Limitation of Operations:** The Contractor shall conduct the work in such manner and sequence to assure the least interference with traffic. The contractor shall have due regard to the location of detours and provisions for handling traffic. The Contractor shall not begin new work to the prejudice of work already started. The Engineer may require the Contractor to finish a section on which work is in progress before starting on additional sections if the finishing of such section is essential to public convenience and safety.

**8.06 Labor, Methods and Equipment:** The Contractor shall employ sufficient labor and equipment to prosecute the work to completion in accordance with the contract.

Workers shall have sufficient skill and experience to properly perform the work.

Any representative of the Contractor or Subcontractor who, in the opinion of the Engineer, does not perform in a skillful manner or is disorderly shall be, upon written request, immediately removed by the Contractor or Subcontractor. A person removed shall not return to the work without written approval. If the Contractor fails to remove such a person or fails to furnish suitable and sufficient personnel to properly prosecute the work, the Engineer may suspend the work by written notice.

Equipment proposed for use in the work shall be of sufficient size and in such mechanical condition as to meet requirements of the work and produce a satisfactory quality of work. No damage to the roadway, adjacent property or other highways shall result from the use of equipment.

When methods and equipment are not specified, the Contractor may use any methods or equipment that will accomplish the work in conformity with the contract.

The Contractor may request permission to use a method or type of equipment other than specified in the contract. The request shall be in writing and shall include a description of the methods and equipment proposed and the reasons for requesting the change. If approval is given, it will be on the condition that the Contractor will be responsible for producing work in conformity with contract requirements. If, after trial use of the substituted methods or equipment, the Engineer determines that the work produced does not meet contract requirements, the Contractor shall discontinue use of the substituted method or equipment and shall complete the work with the specified methods and equipment. The contractor shall remove the deficient work and replace it with work of specified quality or take other corrective action as directed. No change

will be made in payment for contract items involved nor in contract time as a result of authorizing a change in methods or equipment.

**8.07 Determination and Extension of Contract Time:** The number of days allowed for completion of the work will be stated in the contract.

On working day contracts, a working day will be charged when construction operations proceed for at least 5 continuous hours of the day or 65 percent of the normal work day, whichever is greater, with the normal working force engaged in performing the controlling item of work.

Should the Contractor prepare to begin work on any day in which inclement weather, or the conditions resulting from the weather, prevent work from beginning at the usual starting time, and the crew is dismissed as a result, the Contractor will not be charged for a working day whether or not conditions change during the day and the rest of the day becomes suitable for work.

No working days will be charged for the following days: 1) Saturdays and Sundays when no work is performed, 2) State recognized holidays that are defined as regular legal holidays or special holidays that are proclaimed by the Governor or fixed by the Legislature on which no work is performed, 3) Days on which delays, attributable solely to the Contracting Agency or other governmental agencies, prevent Contractor from proceeding with the controlling item of work at time of delay and 4) Days on which delays are attributable to the direct effect of strikes, riots or civil commotions.

When the contract time is on a working day basis, the Engineer will furnish the Contractor a monthly statement showing the number of days charged to the contract for the preceding month and the number of days specified for completion of the contract. The Contractor will be allowed 14 calendar days in which to file a written protest setting forth in what respect said monthly statement is incorrect; otherwise, the statement shall be considered accepted by the Contractor as correct.

If a protest is filed by the Contractor, the Contracting Agency will conduct such reviews and investigations as required to rule on the protest within 30 calendar days from the date the statement is furnished the Contractor. The number of days charged as listed, or revised within the allotted time, shall become final at the end of this 30-day period, subject to change only through legal action.

When the contract time is on a calendar day basis, it shall consist of the number of calendar days stated in the contract beginning with the date stipulated in the Notice to Proceed, including Saturdays, Sundays, holidays and non-work days. All calendar days elapsing between the effective dates of written orders to suspend work and to resume work for suspensions not the fault of the Contractor will be excluded.

When the contract time is a fixed calendar date, it shall be the date on which all work on the project shall be completed.

The contract time for the work as awarded is based on the original quantities as defined in Subsection 2.04 and includes time to procure material, equipment and an adequate labor force to complete the work. If satisfactory fulfillment of the contract requires performance of work in greater quantities than those specified, or requires performance of extra work, the contract time will be increased on a basis commensurate with the following: When the contract is altered in accordance with Subsection 4.02 and the Contractor requests additional contract time, the document authorizing or ordering alterations will show the number of additional days justified, the number of days added by anticipated overrun in costs (if any) due to alterations, and the difference between these two numbers. The difference between these two numbers will be added to the contract time.

If the Contractor finds it impossible, for reasons beyond the Contractor's control, to complete the work within the contract time as specified or as extended in accordance with the provisions of this Subsection,

the Contractor may, at any time prior to the expiration of the contract time as extended, make written request to the Engineer for an extension of time setting forth therein the reasons which justify granting the request. The Contractor's plea that insufficient time was specified is not a valid reason for extension of time. If the Engineer finds that the work was delayed because of conditions beyond the control and without the fault of the Contractor, the Engineer may extend the contract time in such amount as conditions justify.

When Substantial Completion has been certified, daily time charges will cease.

**a. Calendar Day Contracts:** When the contract time is on a calendar day basis, it shall consist of the number of calendar days stated in the contract beginning with the date stipulated in the Notice to Proceed. All calendar days will be charged contract time, including days elapsing between the effective dates of written orders to suspend work and to resume work for suspensions not the fault of the contractor. Contract time extensions will be granted for any delays for which the Contracting Agency is responsible.

**b. Excusable, Non-Compensable Delays:** Excusable non-compensable delays are delays that are not the contractor's or the Contracting Agency's fault or responsibility. The engineer will not grant additional payment for excusable, non-compensable delays, but will grant additional contract time.

**c. Excusable, Compensable Delays:** Excusable, compensable delays are delays that not the contractor's fault or responsibility, but are the Contracting Agency's fault or responsibility. The contractor will be granted additional contract time and payment.

**d. Non-Excusable Delays:** Non-excusable delays are delays that are the contractor's fault or responsibility. All non-excusable delays are non-compensable.

**e. Concurrent Delays:** Concurrent delays are separate critical delays that occur at the same time. When a non-compensable delay is concurrent with a compensable delay, the contractor is entitled to additional time but not additional payment.

**8.08 Failure to Complete on Time:** For each calendar day or working day, as specified, that the work remains uncompleted after expiration of the contract time, the sum specified in Table 1 will be deducted from payments for the work, not as a penalty but as stipulated damages.

Permitting the Contractor to continue work after expiration of the contract time will not operate as a waiver of the Contracting Agency of its right under the contract.

The Contractor may request a waiver of such portions of the stipulated damages that accrue after the work can be safely and conveniently used for its intended purpose. The written request may be submitted to the Engineer at any time after expiration of the contract time, but shall be submitted within 14 calendar days after final inspection, and shall set forth the reasons which the Contractor believes justify the waiver and the effective date thereof. The Contracting Agency will be the sole judge of damages suffered and will waive damages accordingly.

Based on the amount of the original contract, the charges given in Table 1 will be made for each contract date after expiration of the contract time.

**Table 1**

**Stipulated Damages**

<b><u>Original Contract Amount</u></b> (Million Dollars)	<b><u>Daily Charge</u></b> (Dollars)
0 – 1	\$ 500
>1 – 5	1,000
>5 – 10	2,000
>10 – 15	4,000
>15 – 20	8,000
>20	10,000

The contractor will automatically be subject to an assessment of stipulated damages by the expiration contract time on the project. At any time stipulated damages are assessed, such damages shall be assessed continuously until the cause of such assessment ends, regardless of intervening circumstances.

The amount of stipulated damages will be deducted from payments for the work under the contract or any other contract the Contractor has with the Contracting Agency. The contractor hereby waives any requirement of written notice of default prior to any deduction for stipulated damages from any payments. When the amount of stipulated damages exceeds the sum which would have been payable under the contract, the Contractor and surety shall be liable and pay the Contracting Agency the amount of such excess.

**8.09 Default and Termination of Contract:**

- a. The Contractor will be in default if the Contractor:
- 1) Fails to complete the project within contract time,
  - 2) Becomes insolvent or a petition is filed in the Bankruptcy Courts of the United States under Chapters 7 or 13 of the Bankruptcy Code naming the Contractor as debtor or conversion of a proceeding or petition from Chapter 11 to Chapter 7 or 13 of the Bankruptcy Code or seeks a forced respite under the laws of this State or similar debtor protection by courts of other states,
  - 3) Allows any final judgment to stand unsatisfied for a period of 14 calendar days,
  - 4) Makes an assignment or arranges for performance by others of all or part of the performance of the contract, other than by subletting pursuant to 8.01, without approval and consent in advance of the Contracting Agency, and the surety in the case of an assignment of the entire contract,
  - 5) Makes an assignment of contract proceeds for the benefit of one or more creditors without prior written approval and consent of the Contracting Agency; any such purported assignment will not be honored without evidence of compliance with this subparagraph,
  - 6) Discontinues prosecution of the work,
  - 7) Fails to begin work within 10 calendar days of the “Notice to Proceed”,
  - 8) Fails to perform with sufficient workers, equipment or materials to assure prompt completion of the work,
  - 9) Performs the work unsuitably or neglects or refuses to remove materials, or replace or repair rejected work,
  - 10) Fails to resume work which has been discontinued after notice to do so,
  - 11) Fails to maintain licenses or certifications, or to acquire permits, necessary to accomplish the work;
  - 12) Fails to perform the work in an acceptable manner or violates any provision in the contract or to follow any federal, state or local laws pertaining to performance, or

- 13) Fails to follow federal, state or local laws, rules and regulations concerning construction safety and health standards or permits conditions upon the site of the work which are unsanitary, hazardous or dangerous to the health or safety of the Contractor's workmen or the public.
  - 14) Is a party to fraud.
- b. Except as provided in Heading (f), the Contracting Agency will give written notice to the Contractor of the Contracting Agency's determination that the Contractor is in default for any cause specified in this Subsection. The Contracting Agency may give notice to the Contractor of its intent to put the Contractor in default under this Subsection and specify a period of time in which the Contractor shall cure the deficiency or a notice of default will issue. Upon notice of default, the Contracting Agency will have authority, without violating the contract, to take prosecution of the work out of the hands of the contractor as provided in Heading (c).
  - c. Upon the Notice of Contractor's default, the Contracting Agency may notify Contractor's surety that it shall undertake completion of the project within 10 calendar days of receipt of Notice of the Contracting Agency's request that it procure prosecution of the work by another Contractor until the contract is completed in an acceptable manner. At the end of the 10 calendar day period, or at any time if immediate action must be taken to protect the public interest or the safety of the public or workers, the Contracting Agency may take prosecution of the work out of the hands of the Contractor or surety, may appropriate or use the materials and equipment on the project, or may enter into an agreement for completion of the contract or use other methods as required for completion of the contract in an acceptable manner.
  - d. Nothing herein shall be construed to require or obligate the Contracting Agency to suspend contract time or to release the obligation of the Contractor and surety for stipulated damages in accordance with Subsection 8.08.
  - e. The costs incurred by the Contracting Agency due to the Contractor's default including attorney's fees, or for completing the work under contract, will be deducted from any monies due or which may become due the Contractor. When this expense exceeds the sum which would have been payable under the contract, the Contractor and surety shall be liable and shall pay the Contracting Agency the amount of such excess.
  - f. The Contractor will automatically be in default by the expiration of contract time on the project and the Contractor hereby waives any requirement of written notice of default for failure to attain final completion of the project within the contract time. If prosecution of the work is to be taken out of the Contractor's hands for failure to complete the project within contract time, notice will be given to the Contractor and surety of the taking of the prosecution of the work out of the Contractor's hands in accordance with Heading (c).

**8.010 Termination of Contractor's Responsibility:** The contract will be considered complete when all work has been satisfactorily completed, the final inspection made, and the work accepted by the Contracting Agency. The Contractor will then be released from further obligation except as set forth in the Contractor's payment/performance bonds and Subsection 7.21 and Section 9.

**8.011 Termination of Contract:** The Contracting Agency may, by written notice, terminate the contract or any portion thereof when, for reasons beyond either the Contracting Agency's or Contractor's control, the Contractor is prevented from proceeding or completing the work as originally contracted, or when termination would be in the public interest. Such reasons for termination may include, but will not be limited to, executive orders of the President relating to prosecution of war or national defense, national emergency which creates a serious shortage of materials, orders from duly constituted authorities relating to energy conservation and restraining orders or injunctions obtained by third-party citizen action resulting

from national or local environmental protection laws or where the issuance of such order or injunction is primarily caused by acts or omissions of persons or agencies other than the Contractor.

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

Reimbursement for organization of the work, and other overhead expenses (when not otherwise included in the contract), and moving equipment and materials to and from the project will be considered.

Acceptable materials obtained or ordered by the Contractor for the work that are not incorporated in the work shall, at the option of the Contractor, be purchased by the Contracting Agency at actual cost as shown by receipted bills and actual cost records at such points of delivery as designated.

Termination of a contract or a portion thereof, shall not relieve the Contractor of responsibility for the completed work, nor shall it relieve the surety of obligation for any just claim arising from the work performed.

**8.012 Termination of Contract for Convenience:** The Contracting Agency may, by written notice, terminate the contract or any portion thereof for the Contract Agency's convenience and without cause. Upon receipt of written notice from the Contracting Agency of such termination, the contractor shall cease operations as directed by the Contracting Agency in the notice and complete work not terminated; take actions necessary, or those that the Contracting Agency may direct, for the protection and preservation of the Work; place no further subcontracts or order materials, services, or facilities, except as approved by the Contracting Agency to complete any remaining portion of the contract; terminate all existing subcontracts and purchase orders to the extent they relate to terminated work; deliver to the Contracting Agency any unfabricated or partially fabricated parts, work in progress, completed work, supplies, and other material produced or acquired for the work terminated; coordinate a time and date with the engineer to inventory materials obtained but not yet used for the project; deliver all completed or partially completed plans, drawings, information, and other property required to be furnished to the Contracting Agency if the contract had been completed.

In case of such termination for the Contracting Agency's convenience, the contractor shall be entitled to receive payment for (1) the quantity of units or items of work completed at the contract unit price, and, as mutually agreed, for items of work partially completed, and (2) reasonable direct labor costs and non-labor cash expenditures incurred for unplanned termination related activities described above.

The Contracting Agency will not be liable for destroyed, stolen, or damaged material; unliquidated advance or other payments to third parties under the terminated portion of the contract; or the agreed upon price or the proceeds from the sale of any materials, supplies, or other items acquired and sold, or retained, by the contractor. In addition, the Contracting Agency will deduct from any termination payment any claim the Contracting Agency has against the contractor under the Contract.

Acceptable materials obtained or ordered by the contractor for the work that are not incorporated in the work shall, at the option of the contractor, be purchased by the Contracting Agency at actual cost as shown by receipted bills and actual cost records at such points of delivery as designated.

Termination of a contract or a portion thereof, shall not relieve the contractor of responsibility for the work completed, nor shall it relieve the surety of any obligation for any just claim arising from the work performed.

## 9.WARRANTY AND GUARANTEE

- 9.01 One Year Correction Period:** If within one year after the date of Substantial Completion or such longer period of time as may be prescribed by Laws or Regulations or by the terms of any applicable special guarantee required by the contract or by any specific provision of the contract, any work is found to be defective, the Contractor shall promptly, without cost to the Contracting Agency and in accordance with the Contracting Agency's written instructions, either correct such defective work, or if it has been rejected by the Contracting Agency, remove it from the site and replace it with non-defective work. If Contractor does not promptly comply with the terms of such instructions, or in an emergency where delay would cause serious risk of loss or damage, Contracting Agency may have the defective work corrected or the rejected work removed and replaced, and all direct, indirect and consequential costs of such removal and replacement (including but not limited to fees and charges of engineers, architects, attorneys and other professionals) will be paid by Contractor. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the work, the correction period for that item may start to run from earlier date if so provided in the specifications or written agreement.

Correction Period: Nothing herein concerning the correction period shall establish a period of limitation with respect to any other obligation which Contractor has under the contract. The establishment of time periods relates only to the specific obligations of the Contractor to correct the work, and has no relationship to the time within which his obligations under the contract may be sought to be enforced, not to the time within which proceedings may be commenced to establish his liability with respect to his obligations other than to specifically correct the work.



## 10. MEASUREMENT AND PAYMENT

**10.01 Measurement of Quantities:** All work completed under the contract will be measured according to United States standard measure.

The Engineer shall be the judge of the accuracy of measurements, or approximations made in lieu of accurate determinations and these decisions shall be binding upon both parties.

When specifications or plans indicate that quantities for certain pay items have been computed with sufficient accuracy for payment, the pay quantities for those items will be the design quantities subject to the following adjustments. Design quantities will be adjusted if the Engineer makes changes to fit field conditions, if plan errors are proven, or if design changes are necessary.

When measurement of excavation and embankment is based on cubic yard (net section), the design quantities will be verified or revised in accordance with Engineer's policy.

Longitudinal measurements for area computations will be made horizontally. Transverse measurements for area computations will be the neat dimensions shown on the plans or ordered in writing.

A station will be 100 linear feet.

Structures will be measured according to neat lines shown on the plans or as directed.

Items measured by the linear foot, such as pipe culverts, underdrains, etc., will be measured according to neat lines shown on the plans or as directed.

In computing volumes of excavations, the average end area method or other acceptable methods will be used.

Thickness of plates and galvanized sheet metal used in the manufacture of corrugated metal pipe and metal plate pipe culverts and arches will be measured in decimal fractions of inches.

The term "ton" will mean the short ton of 2,000 pounds avoirdupois. Materials measured or proportioned by weight shall be weighed on approved scales by qualified personnel at designated locations. If material is shipped by rail, the car weight may be accepted provided the weight of material only will be paid for; however, car weights will not be acceptable for material to be passed through mixing plants. Trucks used to haul material being paid by measured weight shall be weighted empty at such times as directed; and each truck shall bear a plainly legible identification mark.

Materials specified to be measured by volume in hauling vehicles shall be hauled in approved vehicles and will be measured therein at the point of delivery on the project. Vehicles may be of any acceptable size or type, provided the body is of such shape that the volume can be readily and accurately determined. Vehicles shall be loaded to at least a predetermined permanently fixed vehicles will be measured in increments of 0.5 cubic yard, except that when tailgate spreaderboxes are used to place aggregate materials for asphaltic surface treatment, the volume of the spreaderbox will be added to the volume of the vehicle. When materials are measured by weight and converted to volume for payment, conversion will be made to the nearest 0.1 cubic yard.

Asphaltic materials will be measured by the gallon or by the ton. When specified, volumes of liquid asphaltic materials will be converted to the gallons at 60 degrees F in accordance with DOTD TR 321.

Net certified scale weights or weights based on certified volumes (in the case of shipments by rail, truck or other transport) will be used as a basis of measurement, subject to correction when material has been lost in transit, wasted or otherwise not incorporated in the work.

When asphaltic materials are shipped by truck or transport, net certified weights or volume, subject to correction for loss or foaming, may be used for computing quantities.

Portland cement will be measured by the hundredweight (CWT).

Timber will be measured by the thousand feet board measure (MFBM) incorporated in the structure. Measurement will be based on nominal widths and thicknesses and the extreme length of each piece.

The terms “lump sum” and “each” when used as an item of payment will mean complete payment for the work described in the contract.

When a complete structure or structural unit is specified as the unit of measurement, the unit of measurement will include the necessary fitting and accessories. Incidental work will not be measured for payment.

When standard manufactured items are specified, and these items are identified by gage, unit weight, section dimensions, etc., such identification will be considered to be nominal weights or dimensions. Unless more stringently controlled by tolerances in cited specifications, manufacturing tolerances established by the industries involved will be accepted.

When conversion is necessary from United States standard units to International System of Units (SI units) or from SI units to U.S. Standard Units the guidelines, terminology, conversion factors, and rules for rounding in the Standard Metric Practice Guide, AASHTO R1 will be used.

**10.02 Scope of Payment:** The Contractor shall receive and accept compensation as provided in the contract as provided in the contract as full payment for furnishing materials and for performing work in an acceptable manner and for all risk, loss, damage or expense arising out of prosecution of the work subject to the provisions of 7.21. All work on Pay Items must be subject to inspection by the Engineer. Any work performed without being subject to inspection by the Engineer may not be measured or paid.

Contractor accepts the summation of the product of the unit prices bid on the schedule of items, or as altered by change order, multiplied by the actual quantity placed or performed for each such item per its unit measure, as audited by the Engineer, as full, complete, and final compensation under the contract for all work, labor, materials, and other direct costs; indirect expenses and overhead; and any attained profit. Only those quantities for each item necessary to complete the project, as adjusted by any change orders approved by the Contracting Agency or designee, will be compensated.

When the “Payment” clause in the specifications relating to any unit price in the bid schedule requires that the said unit price be considered compensation for certain work, such work will not be measured nor payment made under any other pay item.

**10.03 Compensation for Altered Quantities:** When contract quantities are altered in accordance with Subsection 4.02, or when final quantities vary for other reason from the quantities in the bid schedule, the Contractor shall accept as payment in full, payment at the contract unit prices for the accepted quantities of work done. No allowance, except as provided hereinafter, will be made for any increased expense, loss of expected reimbursement or loss of anticipated profits claimed by the Contractor resulting either directly from such alterations or indirectly from unbalanced allocation among the contract items of overhead expense of the Contractor and subsequent loss of expected reimbursements therefore or for other cause.

When alterations of quantities are caused by alteration in the plans, and such alterations affect the methods or sequence of construction, an allowance will be made, either for or against the Contractor, in such amount and basis as agreed to in advance of the performance of the work. The plan change authorizing or ordering the work shall show how the allowance was derived. Except when otherwise authorized by the Engineer, such derivation shall show, as a minimum, breakdown of costs as detailed in Subsection 10.04, headings (a) through (g), except that projected costs rather than actual costs will be used.

When alterations in quantities result in an increase or decrease of more than 25 percent in the contract quantity as awarded on any major item of the contract, a supplemental agreement to the contract may be executed between the Contracting Agency and the Contractor at the request of either party, prior to performance of any work in excess of 25 percent of the contract quantity. When the supplemental agreement is executed, the consent of the Contractor's surety shall be obtained and furnished to the Engineer.

A "Major Item" is an item included in the contract as awarded with a total cost equal to or greater than 10 percent of the original total contract amount.

Any adjustment in unit price will be made on only that portion of the major item exceeding 25 percent increase or decrease. Such adjustment will be made based on the actual cost to perform that portion of the work in excess of the 25 percent increase or decrease. The actual costs shall be itemized in accordance with Subsection 10.04, headings (a) through (g), except that projected costs will be used in case of an increase in quantity. When a supplemental agreement or change order is executed for an adjustment in unit price, the consent of the contractor's surety shall be obtained by the contractor and furnished to the Engineer.

A "Minor Item" is an item included in the contract as awarded with a total cost of less than 10 percent of the original total contract amount. A minor item shall become a major item if it is increased by such an amount that its total cost is equal to or greater than 10 percent of the original total contract amount. If a minor item is increased to the extent that it becomes a major item, only that part of the item that exceeds 12.5 percent of the original total contract amount will be considered on any supplemental agreement. The supplemental agreement shall be executed prior to performance of any work in excess of 12.5 percent of the contract quantity. The requirements of the supplemental agreement shall be as described above for increases in major items. If a minor item is increased or decreased, no adjustment will be made in the unit price.

**10.04 Compensation for Alterations of the Contract:** Payment for work performed in accordance with Subsection 4.02 will be made at the unit prices or agreed prices stipulated in the plan change authorizing the work. The Contracting Agency may require the Contractor to do such work on a force account basis, except that compensation for altered quantities shall be in accordance with Subsection 10.03.

- a. Unit Prices:** When payments are made at the contract's established unit prices, and the work requires a material change in construction method or sequence, adjustment to the unit prices for or against the contractor shall be made in accordance with Subsection 4.02.
- b. Negotiated Prices:** The Contracting Agency's objective is to compensate the contractor using the same pricing formulas established by the contractor in determining the original bid contract prices. Therefore, reasonable rates for labor burden, company owned equipment internal cost recovery rates, jobsite overhead items and rates, home office overhead and profit mark-up on direct costs, and other pricing components established by the contractor at the time the original contract bid prices were determined will also be used in determining the negotiated prices for the change order work. The change order authorizing the work shall include a detail cost breakdown showing direct labor, materials, equipment, and subcontractor costs, as well as each of the pricing components listed above.

In order to facilitate the identification of the original contract bid prices and the detailed cost breakdown used in bid preparation, the contractor is encouraged to place their original bid estimate

preparation documents, working papers, and notes in “escrow” upon executing the awarded contract and provide the Contracting Agency proof of such placement in accordance with Subsection 3.07. If this action is undertaken, the contractor is required to prepare the “Summary of Key Bid Pricing Formula Elements” form, which is to be included with the escrowed bid estimate work papers and notes as its first summary document. When the contractor and the Department choose to utilize Negotiated Prices to resolve change order amounts for extra work, claims for additional compensation, or other contract price modifications, the escrowed documents and information will be open to department review to verify the original bid estimate pricing formulas and information, and then used to price the change order. The specific escrow procedures, documents to be escrowed, and the “Summary of Key Bid Pricing Formula Elements” form shall conform with the requirements of the Contracting Agency.

**c. Force Account:** When “force account” is the method of payment, the contractor shall be paid the direct cost of the work as determined and documented in (d) through (j) below. Jobsite and home office overhead indirect expenses, and profit for all parties shall be considered fully compensated by a 15 percent mark-up on allowable direct cost items described in (d) through (g) below, and the mark-up on direct cost for the subcontractor and contractor described in (h) below. The Contracting Agency may consider additional reimbursement to the contractor for indirect fixed jobsite overhead costs for excusable compensable delays as defined in 8.07 when the change order results in extension of the project’s critical work path and the 15 percent mark-up on direct costs is deemed by the Contracting Agency to be insufficient.

**d. Direct Labor:** For labor and working foremen in direct charge of operations, the contractor shall receive the wage rates agreed on in writing before beginning work for each hour that said labor and foremen are engaged in such work. Jobsite and home office supervisory personnel shall not be included as direct labor.

The contractor shall receive the actual costs paid to, or in behalf of, workers for subsistence and travel allowances, health and welfare benefits, pension fund benefits or other benefits when such amounts are required by collective bargaining agreement or other employment contract applicable to the classes of labor employed on the work, but limited to a maximum daily rate for subsistence and travel allowances. This maximum shall be agreed upon prior to the contractor incurring such charges.

**e. Direct Materials:** For materials accepted by the engineer and used, the contractor shall receive the actual cost of such materials delivered to the work, including transportation charges and sales taxes if applicable.

**f. Equipment:** For authorized machinery or special equipment the contractor shall receive the rental rates agreed on in writing before such work is begun. For equipment rented from independent outside sources, the contractor will be reimbursed the reasonable actual cost as shown on paid rental invoices. For company owned equipment, the contractor will be reimbursed his internal cost recovery equipment charge rate consistent with his original bid cost estimates. The Department’s Engineering Directives and Standards Manual, EDSM III.1.1.27, entitled Equipment Rental Rates, provides additional guidance concerning allowable equipment rental rates and their application. If the contractor chooses to use a rental rate guide book instead of his internal cost recovery rates to establish rental rates for company owned equipment, adjustments to the allowable type of equipment and hours per day must be made as described in the EDSM. In addition, no 15 percent mark-up on equipment direct cost for jobsite and home office overhead expenses and profit will be allowed if the contractor chooses to use rental rate guide book prices instead of his internal cost recovery rates.

- g. Bond, Insurance and Tax:** For property damage, liability and workmen's compensation insurance premiums, unemployment insurance contributions, social security taxes, and bond costs on force account work, the contractor shall receive the actual cost thereof. The contractor shall furnish satisfactory evidence of the rates paid for such bond, insurance and tax.
- h. Subcontractor Costs:** For change order work performed by an approved subcontractor, the subcontractor shall receive the subcontractor's actual and reasonable allowable direct cost of such work as described in (d) through (g) above plus a 15 percent mark-up for the subcontractor's indirect jobsite and home office overhead expenses and profit. In addition, the contractor will be paid a 10 percent mark-up on the subcontractor's total direct and indirect costs, and profit for general supervision and sequencing of the change order work.
- i. Non-allowable Costs:** No additional contractor cost reimbursement will be made for general superintendence, small tools or craft specific tool allowances, or other direct or indirect costs not specifically included in (d) through (h) above.
- j. Statements:** No payment will be made for force account work until the Contractor has furnished the Engineer with duplicate itemized statements of the cost of such work detailed as follows:
  - 1) Name, classification, date, daily hours, total hours, rate and extension for each laborer and foreman.
  - 2) Designations, dates, daily hours, total hours, rental rate and extension for each unit of machinery and equipment.
  - 3) Quantities of materials, prices and extensions.
  - 4) Transportation of materials.
  - 5) Cost of property damage, liability and workmen's compensation insurance premiums, unemployment insurance contributions and social security tax.

The contractor's representative and the engineer shall compare records of the cost of work done as ordered on a force account basis. Such comparison shall be made daily. Statements shall be accompanied by invoices for materials used and transportation charges. If materials used on force account work are not purchased for such work, but are taken from the Contractor's stock, in lieu of invoices, the Contractor shall furnish an itemized list of such materials showing that the quantity claimed was actually used, and that the price and transportation costs claimed represent the actual cost to the Contractor. Invoices shall be accompanied by the Contractor's notarized statement that payment in full has been made for the materials.

**10.05 Eliminated Items:** Should any items contained in the contract be found unnecessary for proper completion of the work, the Engineer may, upon written order to the Contractor, eliminate such items from the contract. Such action shall not invalidate the contract.

When an item is eliminated, the Contractor will be reimbursed for authorized work done towards completion of the item. No allowance, except as provided herein, will be made for any increased expense, loss of expected reimbursement or loss of anticipated profits claimed by the Contractor resulting either directly from such elimination or indirectly from unbalanced allocation among the contract items of overhead expense by the Contractor and subsequent loss of expected reimbursements therefore or for other reasons.

The plan change authorizing reimbursements shall show how the reimbursements were derived. Except when otherwise authorized by the Engineer, such derivation shall show breakdowns of costs as detailed in Subsection 10.04, headings (a) through (j).

**10.06 Partial Payments:** Provided the work is prosecuted in accordance with the contract provisions, the Engineer will make the 1<sup>st</sup> progress estimate within 2 months from the date indicated to begin work in the Notice to

Proceed. The Contracting Agency will determine the progress estimate date. Each successive progress estimate will be made on this date of the month thereafter until completion of the contract. Each progress estimate will be an approximation of the value of work performed up to the date the estimate is made and will be based on material in place and labor expended thereon, but no more than 95 percent of the total contract price of the work will be paid in advance of final acceptance.

The amount of said estimate, after deducting retainage and all previous payments, shall be payable to the Contractor.

Retainage shall be 10 percent of the amount of work complete to date if the contract price is up to \$500,000 and 5 percent of the work complete to date, if the contract price is over \$500,000.

Monthly estimates will be approximate and subject to correction in subsequent estimates.

Should defective work or material be discovered or reasonable doubt arise as to the integrity of any part of the work prior to final acceptance and payment, an amount will be deducted from subsequent estimates equal in value to the defective or questioned work. Payment for this work will not be included in subsequent estimates until defects have been remedied or causes for doubt removed.

If the Contractor is not a corporation, the Contractor's Federal Identification Number (if a firm) or Social Security Number (if an individual) shall be furnished to the Contracting Agency before payments will be made to the Contractor for work under the contract.

Payment of the monthly estimate shall not be taken as an admission that the work is done or that its quality is satisfactory, nor as a release of the Contractor from the responsibility for any portion thereof, but the whole work and all particulars relating thereto shall be subject to revision and adjustment by the Engineer at the time of final acceptance and payment of the final estimate.

#### **10.07 Payment for Stockpiled or Stored Material:**

- a. **General:** Payment for stockpiled or stored material will be considered only for materials anticipated to be stored for periods in excess of 30 calendar days. When approved, advance payments may be made for fabricated or natural materials that are to be incorporated in the project when stockpiled materials are stored on the project or in a dedicated stockpile at an approved site outside the limits of the project within the State of Louisiana. Payments shall be limited to durable materials described herein and shall represent a significant portion of the project cost. Perishable articles and small warehouse items are not included. These materials shall meet the requirements of the specifications. Payment for stockpiled or stored materials will not constitute acceptance. It shall be the Contractor's responsibility to protect the material from damage while in storage.

Payment may be made for the invoice price for the materials, which shall not exceed 85 percent of the contract price for the items where the materials are to be incorporated. For fabricated materials purchased from commercial sources and delivered to approved storage, partial payment may be the invoice price plus freight and taxes. The quantity of material for payment will not exceed the total estimated quantity required to complete the project. The invoice values will not exceed the appropriate portion of the contract items in which such materials are to be incorporated.

The amounts advanced on stockpiled or stored materials will be recovered by the Contracting Agency through deductions made on payments as the materials are incorporated in the work.

Partial payment shall be requested by the Contractor in writing and the following documents shall be furnished: 1) written consent from the Contractor's surety, 2) a copy of the invoices from supplier or manufacturer verifying the cost and quantity of material, and 3) if storage is on private

property, a copy of the lease or agreement granting the Contracting Agency right of entry to property.

Payment for materials stored outside the State of Louisiana will be considered, subject to approval of the Engineer. This will generally be limited to adjacent states, except in cases where it will be in the best interest of the Contracting Agency to pay for these materials. If payment for stockpiled materials outside the State will affect the bid price for an item, the Contractor shall submit a written request to the Engineer prior to bidding.

Within 30 calendar days after payment by the Contracting Agency, the Contractor shall submit a certified copy of invoices from the supplier for each item for which payment has been made. All such invoices submitted shall state the amount received by the supplier as payment in full for the materials. If this certification of payment is not presented within the 30-day period, the advanced payment will be deducted from future progress payments.

Title and ownership of materials for which advancements have been made by the Contracting Agency shall not vest in the Contracting Agency until such materials are incorporated in the work and the work accepted by the Contracting Agency. The making of advancements by the Contracting Agency shall not release the Contractor from the responsibility for any portion thereof.

- b. Fabricated of Manufactured Materials:** Fabricated or manufactured materials may include but is not limited to the following: structural steel, fabricated structural steel items, steel piling; reinforcing steel; electrical equipment; mechanical equipment, precast concrete items; structural timber; timber piling; fencing and guard rail materials; fabricated sign structures and sign panels.
- c. Other Material:** These materials will normally be large quantities of natural or manufactured aggregate. The Contractor's request for payment of stockpiled natural material shall give a detailed description of the material, its intended use and location of the site. This material will be inspected and approved after placement in stockpiles on the project. Approval of the stockpiled materials will be in writing.

**10.08 Adjustment for Changes in Common Carrier Rates:** It is agreed that the accepted proposal for the work is based on common carrier rates on file with the Surface Transportation Board (STB) or with a corresponding intrastate commission or body in effect on the date of opening of bids. Payments to the Contractor will be adjusted upon request to compensate for increases in cost due to changes in common carrier rates becoming effective after the date of opening of bids and before expiration of the contract time. The adjustment shall be limited to an amount determined as follows.

The adjustment shall be the product of the increase in common carrier rates multiplied by the net quantity of material shipped at the new rates to the work and incorporated therein, all as shown by receipted common carrier bills.

If the freight cost by common carrier to the job site is included in the quotation by the supplier to the Contractor, in addition to receipted freight bills, the supplier shall furnish on each invoice a breakdown showing the freight rate, quantity of material and total freight cost. The Contractor shall furnish the supplier's written quotation made prior to the date of bid opening and a notarized statement that the increased freight rate has been paid.

The Contractor's request for payment adjustment due to increased common carrier rates shall be submitted as soon as possible after shipments to the project have been completed. Only one request for such payment adjustment shall be made for each project, and any payment adjustment due the Contractor for increased common carrier rates will be included in the final estimate for the project. No request for such payment

adjustment will be considered unless submitted to the Contracting Agency, with the required receipted bills and forms, within 30 calendar days after final acceptance.

**10.09 Acceptance and Final Payment:** Upon acceptance of the work, the Engineer will execute a certificate that the work provided for in the contract has been completed and accepted under the terms of the contract. The Certificate of Acceptance will be recorded in the office of the Recorder of Mortgages of the parish in which the work has been done. The entire balance due the contractor, including the amounts withheld as retainage in accordance with Subsection 10.06, will be paid to the contractor after the Contracting Agency and Engineer has determined that quantities shown on the final estimate are correct; however, before payment of the final estimate, the contractor shall submit to the Contracting Agency and Engineer a certificate from the Recorder of Mortgages of the parish in which the work has been done to the effect that there are no claims or liens recorded against the contract. The date of the certificate shall not be prior to the expiration of 45 calendar days, but shall be prior to the expiration of 90 calendar days, after the Certificate of Acceptance was recorded in the Mortgage Office.

Prior to payment of the final estimate, all releases or waivers on buildings, wells, utilities and railroads shall be furnished as well as any maintenance bonds, certificates from Health Department, tracings, brochures or other items required by the contract.

Payment of the final estimate shall not release the contractor or sureties from liability as provided in the Contract and contract documents or for any fraud in construction, or in obtaining progress payments, or in payment for materials, labor or other supplies or services for the work, or for any claims for damages, loss or injury sustained by any person through the fault, negligence or conduct of the contractor or any of its employees, agents, subcontractors, suppliers or representatives.



**STATE PROJECT NO. H.013125 (321)**  
**SPECIAL PROVISIONS**

**GENERAL BIDDING REQUIREMENTS:** The specifications, contract and bonds governing the construction of the work are the 2016 Edition of the Louisiana Standard Specifications for Roads and Bridges, together with any supplementary specifications, general provisions, special provisions and technical specifications attached to this proposal.

Bids must be prepared and submitted in accordance with Section 2 of the 2018 Edition of the Louisiana Department of Transportation and Development, Office of Multimodal Commerce, General Provisions.

The plans herein referred to are the plans approved and marked with the project number, project name and parish, together with all standard or special designs that may be included in such plans.

The bidder declares that the only parties interested in this proposal as principals are those named herein; that this proposal is made without collusion or combination of any kind with any other person, firm, association, or corporation, or any member or officer thereof; that careful examination has been made of the site of the proposed work, the plans, Standard Specifications, supplemental specifications, special provisions above mentioned, the Technical Specifications and the form of contract and contract bond; that the bidder agrees, if this proposal is accepted, to provide all necessary machinery, tools, apparatus and other means of construction and will do all work and furnish all materials specified in the contract, in the manner and time therein prescribed and in accordance with the requirements therein set forth; and agrees to accept as full compensation thereof, the amount of the summation of the products of the quantities of work and materials incorporated in the completed project, as determined by the engineer, multiplied by the respective unit prices herein bid.

It is understood by the bidder that the quantities given in this proposal are a fair approximation of the amount of work to be done and that the sum of the products of the approximate quantities multiplied by the respective unit prices shall constitute gross sum bid, which sum shall be used in comparison of bids and awarding of the contract.

The bidder further agrees to perform all extra and force account work that may be required on the basis provided in the specifications.

The bidder further agrees that within 10 days after the contract has been transmitted to him, he will execute the contract and furnish the contracting agency satisfactory surety bonds, one for payment in the amount equal to the contract price and the other for performance in the amount equal to the contract price.

If this proposal is accepted and the bidder fails to execute the contract and furnish the bonds as above provided, the proposal guaranty shall become the property of the contracting agency; otherwise, said proposal guaranty will be returned to the bidder; all in accordance with Subsection 3.04 of the General Provisions.

SECTION 00850 – ADDITIONAL SPECIAL PROVISIONS (to the General Provisions)  
STATE PROJECT No. H.013125 (321)

- SP-1 **COMPLETION.** The contract shall be substantially completed, including the repair of all damages to property resulting from the work of this contract, within the number of calendar days established in the contract from the start date indicated on the Owner's Notice to Proceed.
- SP-2 **START DATE.** The Start Date is the date when the Contract Time commences to run as indicated on the Owner's Notice to Proceed
- SP-3 **LIQUIDATED DAMAGES.** Time is an essential condition of the contract. Should the Contractor fail or refuse to perform the work within the contract time stipulated herein, the Contractor agrees to pay to the Owner as a part consideration for the awarding of this contract, as liquidated damages and not as a penalty, the sum of \$2,000 per day for each calendar day. The Owner shall retain the amount of such damages from any money due or to become due the Contractor under this contract without the necessity of the Owner putting the Contractor or his Surety either or both in default.
- Liquidated damages amount is fixed at \$2,000 per Calendar day. Table 1 from Paragraph 8.08 of the General Provisions will not be used. Additional guidance on liquidated damages is found in Section 00710, paragraph 8.08.
- SP-4 **CORRECTION OF WORK.** The Contractor shall re-execute any work that fails to conform to the requirements of the contract and any defective work that appears during the progress of the work, and shall remedy any defects due to faulty materials or workmanship which appear within a period of one (1) year from the date of substantial completion of the contract. The provisions of this article apply to work done by direct employees of the Contractor and by sub-contractors as well.
- SP-5 **INFORMALITIES.** The Owner has the right to reject all proposals and may exercise the right if doing so appears to be in the best interest of the Owner. The Owner may waive informalities in the lowest proposal and accept this proposal if doing so appears to be in the best interest of the Owner.
- SP-6 **INTENT OF DOCUMENTS.** It is understood that except as otherwise specifically stated in the Contract Documents, the Contractor shall provide and pay for all materials, labor, tools, equipment, supplies, light, power, transportation, superintendent, temporary construction of every nature, and all other services and facilities of every nature whatsoever, necessary to execute, complete and deliver the project within the specified time.
- SP-7 **DEFINITIONS**

- A. When the term "Owner" is used herein, it refers to: The Port of South Louisiana or their designated agent.
- B. The term "Contractor" shall mean the party to whom a contract is awarded for the work on the Project. Only one Contractor is recognized as a party of the Contract, and where the term "Contractor" is used, it refers to the General Contractor. Nothing contained in the contract documents shall be interpreted as, or shall create any contractual relationship between any subcontractor and the Owner.
- C. The term Engineer shall mean LANIER.
- D. "As Directed" and "as instructed" refer to directions or instructions given by the Engineer. Similarly, "approved", "acceptable", and "satisfactory", when used herein, are at the direction of the Engineer subject to the provisions of the contract. The judgment of the Engineer in such matters shall be final.
- E. "Provide", as used herein, including derivatives thereof, shall be interpreted to mean "furnish, fabricated, complete, transport, deliver, install, erect, construct and finish, including all labor, materials, equipment, tools, apparatus, appurtenances and expenses necessary to complete the work in place, ready for operation or use under the terms of these Specifications".
- F. "Include" as used herein, including derivative thereof, shall be interpreted to mean "included but not be limited to".
- G. "Or equal", or "approved equal", "equivalent to", and "similar to" when used in reference to the kind, brand, type, or make of equipment or material specified herein, shall mean that any proposed substitution must be equal, equivalent, or similar in the sole judgment of the Engineer unless otherwise stated, and the Engineer's written approval of such proposed substitution must be obtained.

SP-8 TAXES. Contractor shall not pay any state or local sales taxes or state or local use taxes on material and equipment which are affixed and made a part of the real estate of the project or work or which is permanently incorporated in the project of work (hereinafter referred to as "applicable material and equipment"). All purchases of applicable materials or equipment shall be made by the Contractor on behalf of and as the agent of the Port of South Louisiana, (OWNER), a political subdivision of the State of Louisiana. No state and local sales taxes are owed on applicable materials and equipment under the provisions of Act 1029 of the 1991 Regular Session – Louisiana Revised Statue 47:301 (8) (c). OWNER will furnish Contractor a certificate on a form supplied by the Louisiana Department of Revenue and Taxation and/or local taxing authorities which certifies that OWNER is not required to pay such state or local sales and use taxes and Contractor shall furnish a copy of such certificates to all vendors or suppliers of the applicable materials and equipment. The OWNER agrees to indemnify Contractor against the payment of any state or local sales taxes which Contractor may be forced to pay on the purchase of applicable materials and equipment. The Contractor shall pay all other taxes which are

required to be paid regarding the work or the project or any materials or equipment supplies or purchased by the Contractor for the work under the contract.

The amounts to be paid to Contractor under this contract shall be reduced by any sales tax reflected on invoices for materials to be provided to OWNER with pay estimates.

SP-9 STATUTORY EMPLOYER. Pursuant to La. R.S. 23:1031 and 23:1061, Owner and Contractor contract, agree and stipulate that Owner shall, solely for workmen's compensation purposes, be the statutory employer of any and all of Contractor's employees, and any employees of any subcontractor or agent hired, or retained in any manner by Contractor (and any other person for whom Contractor may be held responsible) while any of said persons are performing any work or providing any services under this agreement. In that regard, Owner and Contractor contract, stipulate and agree that all work performed under this agreement shall be part of Owner's trade, business and occupation, and shall be specifically considered an integral part of and essential to the ability of Owner to generate its services, products and goods. Owner and Contractor further contract, stipulate and agree that the services or work provided by any subcontractor or other person retained by Contractor for the performance of any work or service under this agreement shall be contemplated by and included in this provision.

END OF SECTION

**STATE PROJECT NO. H.013125 (321)**  
**SPECIAL PROVISIONS – CONTRACT TIME**

**CONTRACT TIME:** The entire contract shall be completed in all details and ready for final acceptance within (90) working days.

**OR**

**CONTRACT TIME:** The entire contract shall be completed in all details and ready for final acceptance within (126) calendar days.

SECTION 01010 – SUMMARY OF WORK  
STATE PROJECT No. H.013125 (321)

PART 1 – GENERAL

1.01 APPLICATION

The General Contractor and all Subcontractors shall familiarize themselves with the Bidding Requirements and Division 1 - General Requirements, and shall comply with all parts of these documents pertinent to their work.

1.02 WORK COVERED BY CONTRACT DOCUMENTS

The Contract work includes all plant, labor, transportation, services, materials, tools, supervision, quality control, equipment and facilities necessary to complete all work shown on the drawings and herein specified. The proposed work will consist of the following major items:

**BASE BID:**

The Port of South Louisiana Project entitled “Reserve Grain Facility – Under Dock Refurbishment – Phase 1A”, located in St. John the Baptist Parish, consisting of but not limited to demolition of a portion of the existing approachway, site degrading, and construction required to install a new approachway and guard shack as specified in the Contract Documents.

The Contractor shall be responsible for:

**STRUCTURAL**

A. Mobilization and Demobilization

1. Contractor shall be responsible for the mobilization and demobilization of all equipment, manpower, and all other items necessary to complete the work outlined in the attached documents.

B. Surveying

1. Contractor shall be responsible for all required surveying and layout work necessary for the installation of the new approachway piles and framing in accordance with the Project Drawings and as delineated in the Technical Specifications.

C. Demolition

1. Contractor shall be responsible for all demolition as shown in the Project Drawings and in accordance with the demolition specifications.

- D. Degrading
  - 1. Contractor shall be responsible for removal and disposal of material as shown on the Project Drawings and in accordance with the project specifications. This includes immediately hauling material offsite.
- E. New Approachway
  - 1. Contractor shall be responsible for fabrication and installation of new approachway piles, steel jackets, concrete panels and all other associated steel framing in accordance with the Project Drawings. Includes new stair access from new approachway to existing platform.
- F. New Elevated Guard Shack Framing
  - 1. Contractor shall be responsible for fabrication and installation of elevated steel platform for new guard shack in accordance with the Project Drawings.
- G. Installation of New Guard Shack
  - 1. Contractor shall be responsible for the installation of a new Owner-furnished steel Guard Shack in accordance with the Project Drawings.
- I. Coordination with scaffolding contractor for temporary dock access
  - 1. Contractor shall coordinate with Scaffolding Contractor and provide opening in gallery grating for temporary access tie-in.

## ELECTRICAL

- H. The electrical work shall be performed in accordance with all local codes, the latest editions of the National Electrical Code (NEC) and the National Electrical Safety Code (NESC), the technical specifications and drawings.
- I. Throughout the phases of this project, Contractor shall maintain circuit continuity and functionality for electrical equipment/devices that are to remain in operation.
- J. Demo Work by the Contractor:
  - 1. The Guard Shack building shall be removed by the Contractor. The Contractor shall disconnect and remove the Guard Shack transformer including the associated conduit and wiring as indicated on the project drawings and notes.
  - 2. Contractor shall splice the Guard Shack Transformer feeder cable fed from the “Westinghouse Switchboard” (Dock Electrical Room “MCC-10C”) at a new handrail mounted junction box “JB-1” that shall be located inside the Cover Handling Building as indicated on the project drawings and notes.
  - 3. Contractor shall disconnect and remove the 50KVA, 480/208V transformer and associated disconnect switch, conduit and wiring located on the downstream dock inbound access road as indicated on the project drawings and notes.

4. Contractor shall temporarily disconnect the CCTV Camera cable located on a platform at the northwest corner of the Cover Handling Building. This cable is currently installed in a flexible conduit routed along the downstream side of the approachway that will be demolished. Contractor shall document the cable terminations at both ends prior to disconnection of the cable and commencing the demolition work. This cable shall be replaced with a new cable of the same size/type as the existing cable and shall be re-terminated inside the relocated Data/CCTV/Communication Box during the installation phase of this project.
5. Contractor shall disconnect and remove the conduits and wiring routed along the downstream and upstream sides of the approachway that will be demolished. Contractor shall trace back to the source all the cables and document cable terminations at both ends prior to disconnection of any cable and commencing the demolition work. Contractor shall notify Engineer of any conflict.
6. Contractor shall disconnect the CCTV camera located at the exterior east wall of the Guard Shack, including all the associated accessories, conduit and wiring as indicated on the project drawings and notes. CCTV camera shall be returned to Owner.
7. Contractor shall disconnect and remove the dock access Security Gate and all the associated equipment/devices and wiring. The actual Security Gate Card Reader shall be temporarily relocated as indicated on paragraph D. item 3 of this scope of work. Contractor shall document cable terminations at both ends prior to disconnecting any cable and commencing the demolition work.
8. Contractor shall coordinate with an Owner representative prior to commencing the demolition work.

K. Relocation of Equipment/Devices by the Contractor:

1. Contractor shall relocate the Data/CCTV/Communication Box mounted on the Guard Shack exterior north wall to the New Guard Shack Platform as indicated on the project drawings and notes. Contractor shall procure and install the associated supports, hardware, accessories, conduit, wiring, etc. Extend conduits and wiring as required. Conduit shall be routed as per field conditions. Several equipment/devices shall remain in operation during the different phases of this project. Contractor shall coordinate with Owner's representative prior to commencing the work.
2. Contractor shall relocate the Camera/Intercom system located next to the Security Gate that will be demolished to the temporary Dock Access Gate as indicated on the project drawings and notes. Extend the associated conduit and wiring as required. Conduit shall be routed as per field conditions. Contractor shall coordinate with Owner's representative prior to commencing the work.
3. Contractor shall relocate the Security Gate Card Reader located at the downstream dock inbound access road to the temporary Dock Access Gate as indicated on the project drawings and notes. Extend the associated conduit and wiring as required. Conduit shall be routed as per field conditions. Contractor shall coordinate with Owner's representative prior to commencing the work.

L. Equipment furnished by Owner and installed by the Contractor:



1. New Guard Shack Building:
    - a. New Guard Shack Building will be installed by the Contractor. The Contractor shall procure and install all the associated electrical equipment/devices, accessories, etc. including conduit and wiring as indicated on the project drawings and notes.
  2. New Security Gate System:
    - a. New Security Gate System shall be furnished by Owner. Contractor shall install the new Security Gate System and all the associated accessories/devices. Contractor shall procure and install all the associated conduit and wiring as indicated on the project drawings and notes.
- M. Equipment furnished and installed by the Contractor:
1. Procurement and installation of a temporary Dock Access Gate feeder cable including the associated conduit, supports, etc. as indicated on drawings and the construction documents. Conduit shall be routed as per field conditions. This feeder cable including the associated conduit, etc. shall be removed after the new Security Gate has been installed. Contractor shall coordinate with Owner's representative prior to commencing the work.
  2. Procurement and installation of the Guard Shack and Security Gate CCTV Cameras including the associated accessories, wiring and wiring termination as indicated on the project drawings and notes.
  3. Procurement and installation of handrail mounted lights, supports, conduit, wiring, etc. along the new and existing approachway guardrail as indicated on drawings and the construction documents.
  4. Procurement and installation of a Guard Shack Transformer and associated Fused Disconnect Switch, including hardware, conduit, wiring, etc. as indicated on drawings and the construction documents.
  5. Procurement and installation of Junction Box "JB-1", including the associated supports, accessories conduit and wiring as indicated on the project drawings and notes.
  6. The Contractor shall be responsible for furnishing all materials necessary to complete the work included in this bid package.
  7. Some sections of the existing cables shall be re-used if they are in good condition, passes the insulation test (Megger) and cable length is adequate. Contractor shall contact Engineer if cables cannot be reused.
  8. Contractor shall replace any damaged cable being re-used with a new cable of the same size, type and manufacturer unless otherwise approved by the Engineer.
- N. To minimize downtime, the contractor shall submit a work plan outlining the tasks that will be performed prior to commencing the work.
- O. Mobilization and Demobilization:

1. Mobilization and demobilization of all equipment, manpower, and all other items necessary to complete the work outlined in the attached documents.

P. Testing and Configuration:

1. Testing and inspection of all wiring, grounding, electrical devices/equipment, etc. associated to this project.
2. Provide all other testing requirements as shown in the electrical specifications.

All work shall be fully completed within 126 calendar days from Notice to Proceed.

All work shall be done in accordance with the Plans and Specifications by Lanier.

Additional requirements include all the work required by the Contract Documents.

Contractor's duties:

1. Except as specifically noted, provide and/or pay for:
  - a. Labor, materials, transportation, required services and equipment.
  - b. Tools, construction equipment and machinery.
  - c. Temporary facilities required for construction.
  - d. Other facilities and services necessary for proper execution and completion of work.
  - e. Insurance as required by the Contract Documents.
  - f. Costs for overhead.
  - g. Superintendent and supervision.
  - h. Quality Control.
  - i. Other direct and indirect costs and expenses incidental to the performance of the Work.
2. Pay legally required sales, consumer and use taxes.
3. Secure and pay for, as necessary for proper execution and completion of work, and as specified at time of receipt of bids:
  - a. Permits
  - b. Inspections
  - c. Government and other fees
  - d. License
4. Give required notices.
5. Comply with codes, ordinances, rules, regulations, orders and other legal requirements of public authorities which bear on performance of work.
6. Promptly submit written notice to the Engineer of observed variances of contract documents from legal requirements.
7. Enforce strict discipline and good order among employees.
8. Employ only qualified persons skilled in their assigned tasks.
9. Verify measurements at site and accept responsibility for accuracy of same.
10. Remove obstructions as necessary for proper completion of Work.
11. Secure a source for water, electricity, and natural gas required for the completion of Work.

12. Detailed As-Built Drawings.

**GENERAL AS-BUILT REQUIREMENTS:**

The Contractor shall maintain a full sized set of approved plans on site, and during construction, accurately mark these plans with record information. The color green, for example, could be used to indicate all additions and the color red to indicate all deletions. Clear and concise notes and sketches should accompany changes marked on these plans. These field managed record drawings should be used in the preparation of the final as-built drawings. The following shall be recorded as a minimum on the "As-Built Drawings". Accurate As-Built drawings shall be provided to Engineer within ten (10) days after project is substantially complete.

1. "AS-BUILT DRAWING" shall be clearly labeled on each sheet.
2. The locations and description of any utility lines and other installations of any kind or other description known to exist within the construction area. The location includes dimensions to permanent features.
3. The locations and dimensions of any changes to buildings and structures.
4. Correct elevations to changes made in site grading.
5. Changes in details of design or additional information such as approved placement details, pipe sizes, material changes, etc.

1.03 ITEMS BY OWNER

- A. Independent testing laboratory services at his direction.
  
- B. Owner will furnish products indicated. The Work includes receiving, unloading, handling, and installing Owner-furnished products.
  
- C. Owner-Furnished Products:
  1. New Guard Shack Building
  2. New Security Gate System

1.04 CONTRACT

Construct the work as shown in the plans and specified in the construction documents and specifications.

1.05 CONTRACTOR'S USE OF PREMISES

Confine operations at site to areas permitted by:

1. Law
2. Ordinances
3. Permits

#### 4. Contract Documents

Do not unreasonably encumber site with materials or equipment. Only approved areas of the site may be used by the Contractor for storage, work operations, etc. Such locations shall not unnecessarily interfere in any way with the Owner's operations or the operations of independent contractors.

Do not load structures, slabs, walks, drive surfaces or underground utilities with weight that may endanger structures or integrity.

Assume full responsibility for the protection and safekeeping of Products stored on premises. Obtain and pay for use of additional storage or work areas needed for operations.

Do not interfere with the operation or use of any existing structures or roadway on or near the site. Move any stored products which interfere with operations of Owner or other Contractors immediately upon notification.

Contractor must furnish his own sanitary facilities. Workmen will not be allowed to use existing sanitary facilities anywhere on the Owner's property.

Restrict parking to areas which have been agreed to in writing by the Owner.

Coordinate any interruption in utility services and obtain permission from Owner and Tenant prior to interruption, see Section 01015, Miscellaneous Requirements.

Protect existing underground utilities adjacent to the Work. Use caution in driving vehicles, storing materials and use of equipment, see Section 01015, Miscellaneous Requirements.

#### PART 2 – PRODUCTS

Not Used

#### PART 3 – EXECUTION

Coordinate work with the Owner and Tenant to ensure the continual operation of the existing facility during construction.

END OF SECTION

SECTION 01015 – MISCELLANEOUS REQUIREMENTS  
STATE PROJECT No. H.013125 (321)

PART 1 – GENERAL

1.01 Divisions and Sections

Separation of these specifications into Divisions and Sections is done for convenience only and is not intended to establish responsibilities of work, nor shall it operate to make either the Owner's Representative or the Engineer arbiter establish limits to the Contracts between Contractor and Subcontractors.

Bidding and Contract Requirements

1. The Contractor, by execution of the subject documents agrees to comply with all applicable contract conditions.

1.02 Definitions and Explanations

- A. Scope. This article defines certain terms used in the specifications (Project Manual), and explains the language, abbreviations thereof, format and certain conventions used in the Specifications and associated Contract documents.
- B. Limitations. The definitions and explanations of this article are not necessarily either complete or exclusive, but are general for the work to the extents such definitions or explanations are not stated more explicitly in another provision of the Contract Documents.
- C. General Explanation. A Substantial amount of the Contract Document Specification language constitutes specific definitions for terms found in the other Contract Documents, including the Drawings which must be recognized as diagrammatic in nature and not completely descriptive of the requirements indicated thereon. Certain terms used repetitiously in the contract documents are defined generally in this article.
- D. General Requirements. The provisions and requirements of the Division - 1 Sections(s) apply to the entire Work of the Contract.
- E. Project Site. The space available to the Contractor for the performance of the Work, either exclusively or in conjunction with others performing other Work as part of the project.
- F. Provide. Except as otherwise defined in greater detail, the term "provide" means furnish and install, complete and ready for the intended use, as applicable in each instance.

- G. **Format Explanation.** The format of principal portions of these Specifications can be described as follows; although other portions may not fully comply and no particular significance will be attached to such compliance or non-compliance:
1. **Sections and Divisions:** For convenience, the basic unit of Specification text is a "section," each unit of which is named and numbered. These are organized into related families of sections, and the various families of sections are organized into "divisions," which are recognized as the present industry-consensus on uniform organization and sequencing of Specifications. The section title is not intended to limit the meaning or content of the section, nor to be fully descriptive of the requirements specified therein, nor to be an integral part of the text.
  2. **Parts:** Each section of Specifications has been subdivided into 3 (or less) "parts" for uniformity and convenience (Part 1 - General, Part 2 - Products, and Part 3 - Execution). These do not limit the meaning of, and are not an integral part of, the text which specifies requirements.
- H. **Section Numbering.** Sections are numbered in CSI 5 - Digit System where applicable. Contract Documents sections are placed in the Project Manual in numerical sequence; however, the numbering sequence is not complete, and the listing of sections in the Project Manual must be consulted to determine the numbers and names of Specification sections in the Contract Documents.
- I. **Testing Laboratory.** An independent entity engaged to perform specific inspections or tests of the work and to report and (if required) interpret the results of those inspections or tests.

#### 1.03 Not in Contract

Items indicated on drawings as "NIC", or noted "Not in Contract", are shown for convenience only and are not a part of this Contract.

#### 1.04 Acceptance

Signing of the Contract will be deemed evidence that site and documents have been examined and that the Contractor is familiar with conditions under which the work will be done.

The Contractor shall verify measurements at site and accept responsibility for accuracy of same. The beginning of work indicates acceptance of conditions under which the work will be done.

Extra payments will not be authorized for work that could have been determined by a careful examination of site conditions and coordination with the Contract Documents.

#### 1.05 Minimum Quality/Quantity

In every instance, the quality level or quantity shown or specified is intended as the minimum for the work to be performed or provided.

#### 1.06 Specialist; Assignments

In certain instances the specification text requires (or at least implies) that specific work be assigned to certain specialists or expert entities, who must be engaged for the performance of those units of work.

#### 1.07 Facilitating Overhead Utilities

The Contractor shall examine the site in detail in conformance with other requirements of these specifications. All overhead utilities are not shown on the drawings but are to be noted by the Contractor prior to submission of a bid. Contractor accepts responsibility for execution of the contract duties by submission of his bid.

The responsibility of the Contractor included facilitating overhead lines throughout the completion of the project and assuming all costs for coordinating, de-energizing, re-energizing, temporarily relocating, permanently relocating, or using special construction methods to complete the work as indicated.

#### 1.08 Interferences

Drawings are generally diagrammatic. Contractor shall organize or coordinate his work with that of the different trades so that interference of different equipment, piping, etc., shall be avoided and each piece of equipment, piping, etc., installed to function properly.

In the case where an interference develops, the Engineer is to be consulted to determine which equipment, piping, etc., is to be relocated regardless of which item was first installed.

#### 1.09 Permits

Before commencing any work on the jobsite, the Contractor shall obtain any required permits, licenses and inspections required for all various trades to properly and legally complete the Work.

The Contractor shall apply for any required permits and pay all expenses relative to any required permits.

#### 1.10 Notice to Proceed

After notification from the Owner that the Contractor has signed the construction contract and submitted all necessary bonds, etc., a Notice to Proceed will be issued for the project.

All work is to commence within seven (7) consecutive calendar days after the issuance of the Owner's Notice to Proceed (or Work Order). Substantial Completion of the work is required within one hundred forty-seven (147) consecutive calendar days. Said time limit will commence upon the date of issuance of the Owner's Notice to Proceed. The following items will be stated in the Notice to Proceed:

1. Number of calendar days in the construction contract.
2. Date of the beginning and end of the contract time.
3. Liquidated damages.
4. A statement indicating the Owner's intention to collect liquidated damages if the Contractor exceeds the contract time and any approved extensions.

#### 1.11 Jobsite Maintenance

Keep areas within and about working and storing spaces free from waste materials, trash, debris, garbage, etc. All solid waste, trash, garbage, and debris shall be removed from the site by the Contractor. Owner's dumpsters and other waste receptacles shall not be used by the Contractor.

Throughout the construction period, dirt and dust accumulated in the working, storing and access roadway areas shall be kept to a minimum.

#### 1.12 Personnel and Equipment

Maintain a construction force at site, including competent, qualified superintendent, mechanics, craftsmen and laborers, sufficient to expedite work to completion on date indicated in Contract Documents.

Maintain construction equipment at site, in good condition, sufficient for efficient execution of work.

A responsible member of Contractor's organization shall be kept on site while work is in progress as herein specified. All communications given to the Superintendent, or his assistant in his absence, shall be as binding as if given to the Contractor.

#### 1.13 Location

Datum shall be assumed as shown on the Contract Documents. Use established bench marks on the site.

Contractor shall be solely responsible for all grades, lines and levels.

#### 1.14 Obstruction to Construction



The Contractor shall anticipate and remove all subsurface as well as above surface obstructions to construction of his work, unless information on subsurface obstructions is not available.

#### 1.15 Demands and Causes of Action

Contractor shall defend, indemnify, and hold harmless Owner, its insurers, and Engineer and their agents, employees, related and companion corporations (collectively referred to as Owner and Engineer) from and against any and all claims, demands, and personal injury, wrongful death, or property damage, in any way arising out of or resulting from, directly or indirectly, the work performed by the Contractor or any of his subcontractors, suppliers, or agents, including all damages, losses, expenses, attorneys' fees and costs.

#### 1.16 Existing Utilities

##### A. Interruption of Services

It is essential that all utilities be kept in operation at all times, except when specific written permission of the Owner is given to the contrary. Before any lines are shutdown for tie-ins or rearranging of services, arrangements shall be made a minimum of 48 hours in advance with the Owner. It may be necessary to do this work at night, on Sunday or at a special time of the year, as the Owner may direct, with the length of shutdown agreed upon before work is begun. Any overtime work costs in this connection shall be borne by the Contractor. Normally, only one shutdown will be allowed. The length of shutdown shall be held to a minimum.

##### B. Location of Existing Utilities

The contractor is responsible for locating all existing utilities within the limits of work prior to start of construction. The locations shall be clearly identified prior to excavation and installation of new foundations and structure. If existing utilities are located in conflict with new structure foundations, the contractor shall notify the Engineer.

##### C. Protection of Existing Utilities

The contractor is responsible for thorough protection of existing utilities within the limits of work. Any damage must be immediately repaired to restore service to the Owner including work at night and weekends.

#### 1.17 Watchman

Services of a watchman are not required, and the necessity of such services is left to the discretion of the Contractor, but the Contractor shall be fully responsible for and shall provide reasonable protection to prevent damage to all the work and all materials and equipment to be incorporated therein.

### 1.18 Superintendent

The Contractor shall employ a competent Superintendent and necessary assistants who shall be in attendance at the project site during the progress of the Work. The Owner's Representative shall be advised of the Superintendent to be employed and he shall not be changed, except with the consent of the Engineer, unless Superintendent proves to be unsatisfactory to the Contractor and ceases to be in his employ. The Superintendent shall represent the Contractor and all communications given to the Superintendent shall be as binding as if given to the Contractor. Important communications will be confirmed in writing. Other communications will be so confirmed on written request in each case.

### 1.19 Service Charges

Include all service charges that may be applicable for execution and completion of the Work.

### 1.20 Salvage and Disposition of Material and Equipment

The Owner shall have priority for the selection of salvaged equipment and materials. Any equipment and materials selected to remain the property of the Owner shall be removed and delivered to a location as designated by the Owner on the Site. Material not retained by the Owner shall become the property of the Contractor and shall be removed from the site by him. Owner's dumpsters and other waste receptacles shall not be used by this Contractor.

### 1.21 Coordination of Work

The Contractor shall coordinate, schedule and sequence all work with the Port of South Louisiana. The Globalplex Terminal facility is an active Port and may at times operate 24 hours a day, 7 days a week. The Contractor shall coordinate with the Owner and Tenant regarding sequencing and performance of the work as to not interrupt or adversely affect the ongoing operations at the site. The Contractor shall submit a schedule of work including critical path items to the Engineer for review prior to mobilization to the site. The Contractor shall sequence and plan work around ongoing Port operations including vessel calls, offloading and loading at the terminal. The Contractor is advised that portions of the waterside and landside of the dock may be obstructed by vessels and/or barges which shall take priority in berthing location.

## PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

NOT USED

END OF SECTION

SECTION 01025 – MEASUREMENT AND PAYMENT  
STATE PROJECT No. H.013125 (321)

PART 1 – GENERAL

Payment for the various items shown on the Louisiana Uniform Public Work Bid Form, as further specified herein, shall include all compensation to be received by the Contractor for furnishing all tools, equipment, supplies, and manufactured articles, and for all labors, operations, and incidentals appurtenant to the items of work being described, as necessary to complete the various items of the Work all in accordance with the requirements of the Contract Documents, including all appurtenances thereto, and including all costs of compliance with the regulations of public agencies having jurisdiction. The Contractor is hereby on notice that no separate payment will be made for any item that is not specifically set forth in the Bid Schedule, and all costs therefore shall be included in the prices named in the Bid Schedule for the various appurtenant items of work.

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

NOT USED

PART 4 – MEASUREMENT AND PAYMENT

4.01 General

The Total Bid Price shall cover all work required by the Contract Documents. All costs in connection with the proper and successful completion of the Work, including furnishing all submittals, materials, equipment supplies, and appurtenances; providing all construction equipment, and tools; and performing all necessary labor and supervision to fully complete the Work, shall be included in the unit and lump sum prices bid or described below. All work not specifically set forth as a pay item in the Bid Form shall be considered a subsidiary obligation of the Contractor and all costs in connection therewith shall be included in the prices bid.

4.02 Estimated Quantities

All estimated quantities stipulated in the Bid Form or other Contract Documents or verbally communicated are approximate. The basis of payment for work and materials will be the actual amount of work done and materials furnished as described below. Owner reserves the right to delete portions of the work, including any unit price or lump sum bid items.

Contractor waives any and all rights to claims for overhead, anticipated profit or lost profits, or otherwise, on account of any deleted work.

#### 4.03 Bid Items – Base Bid

##### **A. Mobilization and Demobilization (Item No. 001)**

Measurement and payment for mobilization and demobilization shall be Lump Sum.

The lump sum bid price for “Mobilization and Demobilization” shall include obtaining all permits, insurance, and bonds; moving onto the site all equipment; furnishing and erecting temporary buildings and other construction facilities, and other items as noted in these specifications, providing field office buildings, sanitary and potable water facilities; as required for the proper performance and completion of the work.

Contractor shall perform a visual inspection and condition assessment of job site.

Demobilization will also include all work necessary at the end of the project for the Contractor to remove from the project site all equipment, temporary buildings, residual materials and any other property belonging to the Contractor.

The bid price for mobilization and demobilization shall be limited to a maximum of 10% of the total project bid.

Refer to Section 01505 Mobilization and Demobilization for more information.

##### **B. Surveying (Item No. 002)**

Measurement and payment for surveying for Under Dock Refurbishment – Phase 1A shall be Lump Sum.

Payment will be made at the contract lump sum price for bid item “Surveying for Under Dock Refurbishment – Phase 1A”. Price and payment shall constitute full compensation for all required surveying and layout work as specified on the Drawings.

Refer to Section 01390 Pre and Post Surveys for more information.

##### **C. Demolition (Item No. 003)**

Measurement and payment to perform demolition shall be Lump Sum.

Payment will be made at the contract lump sum price for bid item “Demolition”. Price and payment shall constitute full compensation for all plant, labor, materials and equipment for demolition, removal and disposal at an offsite facility of the existing approachway ramp, guard shack, and electrical equipment. Items to be demolished

include steel piles, steel pipe bracing, and concrete panels, existing guard shack, and associated electrical equipment located within the limits of the work as identified by the Owner and as shown on the drawings and as specified in these specifications. Contractor shall take care to protect all existing structure from damage and shall provide temporary shoring, bracing and falsework as needed to safely perform the work. Demolished materials shall not be allowed to fall into the water, rather must be safely removed and hauled to an offsite disposal site.

Refer to Sections 01 10 00 Scope of Work and 02 41 19, Selective Demolition for more information.

**D. Degrading (Item No. 004)**

Measurement and payment to perform degrading as required for slope stability shall be made per Cubic Yard.

Payment will be made at the contract unit price per each cubic yard for bid item “Degrading”. Price and payment shall constitute full compensation for furnishing all labor and equipment for batture degrading as shown in the Drawings. Contractor shall be responsible for clearing trees and vegetation in the area where degrading is required. Material that is removed during degrading shall be immediately hauled offsite to a disposal site.

Contractor shall be responsible for performing a pre-degrading survey and a post-degrading survey (See Bid Item No. 002). Post-degrading survey to determine total cubic yards of material removed.

Refer to PIP CVS02100 Site Preparation, Excavation, and Backfill Specification for more information.

**E. New Approachway (Item No. 005)**

Measurement and payment to procure, fabricate, and install the new approachway shall be Lump Sum.

Payment will be made at the contract lump sum price for the bid item “New Approachway”. Price and payment shall constitute full compensation for furnishing all labor, materials and equipment for procurement, fabrication, erection, coating and installation of the new approachway as indicated on the Drawings. This bid item shall include all appurtenant items as noted on the contract documents including but not limited to fabrication, erection and installation of the new piles, jackets, pipe bracing, steel framing, and concrete panels, field verification of conditions, dimensions and elevations, touch-up coating of steel surfaces and welds in the field for corrosion protection and all associated bolting and welding. This bid item shall also include the new stair access from the new approachway. Contractor shall include all necessary

temporary shoring, bracing, and stability measures necessary to safely install the new structural steel. Contractor shall include all work platforms, scaffolding, equipment and work barges necessary to safely install the new approachway.

Refer to Sections 03 41 00 Precast Structural Concrete, 05 12 00 Structural Steel Framing, 05 52 13 Pipe and Angle Railings, 05 53 13 Bar Gratings, 09 90 00 Painting and Coating, and 31 62 16 Steel Piles for more information.

**F. New Elevated Guard Shack Framing (Item No. 006)**

Measurement and payment to procure, fabricate, and install the new elevated guard shack framing shall be Lump Sum.

Payment will be made at the contract lump sum price for the bid item “New Elevated Guard Shack Framing”. Price and payment shall constitute full compensation for furnishing all labor, materials and equipment for procurement, fabrication, erection, coating and installation of the new elevated guard shack framing as indicated on the Drawings. This bid item shall include all appurtenant items as noted on the contract documents including but not limited to fabrication, erection and installation of the new steel beams, pipe bracing, and deck framing, grating, handrail and toeplates, field verification of conditions, dimensions and elevations, touch-up coating of steel surfaces and welds in the field for corrosion protection and all associated bolting and welding. Contractor shall include all necessary temporary shoring, bracing, and stability measures necessary to safely install the new structural steel. Contractor shall include all work platforms, scaffolding, equipment and work barges necessary to safely install the new structural steel.

Refer to Sections 05 12 00 Structural Steel Framing, 05 52 13 Pipe and Angle Railings, 05 53 13 Bar Gratings, and 09 90 00 Painting and Coating for more information.

**G. New Guard Shack (Item No. 007)**

Measurement and payment to install the new guard shack shall be made per Lump Sum.

Payment will be made at the contract lump sum price for the bid item “New Guard Shack”. Price and payment shall constitute full compensation for furnishing all labor and equipment for installation of new guard shack as indicated on the Drawings. This bid item shall include all associated electrical work, including testing and configuration.

Refer to Section 01 10 00 Scope of Work and Section 26 specifications for more information.

**H. New Security Gate (Item No. 008)**

Measurement and payment to install the new security gate shall be made per Lump Sum.

Payment will be made at the contract lump sum price for the bid item “New Security Gate”. Price and payment shall constitute full compensation for furnishing all labor and equipment for installation of new guard shack as indicated on the Drawings. This bid item shall include all associated electrical work, including testing and configuration.

Refer to Section 01 10 00 Scope of Work and Section 26 specifications for more information.

**I. New Lighting (Item No. 009)**

Measurement and payment to install the new lighting shall be made per Lump Sum.

Payment will be made at the contract lump sum price for the bid item “New Lighting”. Price and payment shall constitute full compensation for furnishing all labor and equipment for installation of new lighting as indicated on the Drawings. Includes all required testing as outlined in the technical specifications.

Refer to Sections 01 10 00 Scope of Work, 26 56 00 Exterior Lighting and 26 08 00 Electrical Systems Testing and Commissioning for more information.

**J. Coordination with Scaffolding Contractor (Item No. 010)**

Measurement and payment to provide coordination with scaffolding contractor shall be made per Lump Sum.

Payment will be made at the contract lump sum price for the bid item “Coordination with Scaffolding Contractor”. Price and payment shall constitute full compensation for furnishing all labor and equipment for installation opening in grating for scaffold stairs as indicated on the Drawings. Location of opening shall be determined and communicated by the scaffolding contractor.

Refer to Sections 01 10 00 Scope of Work for more information.

END OF SECTION



SECTION 01035 – CHANGE ORDERS  
STATE PROJECT No. H.013125 (321)

PART 1 – GENERAL

1.01 Change Order Procedures

Without invalidating the Contract, the Owner may make reasonable changes by altering, adding to, or deducting from the Work, the Contract Price being adjusted accordingly. No claim for extra work or materials shall be allowed and no alteration of or deduction from the work shall be made, unless same is ordered in writing by the Owner.

Where changes ordered by the Owner involve a monetary consideration, the Contract shall be adjusted by negotiation with the terms of said negotiation being expressed in a supplemental agreement or Change Order signed by the Owner, the Contractor, and the Project Engineer.

If the Owner and the Contractor are unable to reach an agreement as to the monetary consideration of a Contract addition, the Engineers acting as the Owner's representative may order the Contractor to do such work on a force account or time and materials basis.

The Contractor shall furnish labor, equipment and materials necessary to complete the work in a satisfactory manner and within a reasonable period of time. For the work performed, payment will be made for the documented actual necessary expense of the following:

1. Field labor and foremen, who are directly assigned to the time and materials work (actual payroll cost, including wages, fringe benefits as established by negotiated labor agreements, and labor taxes as established by law). The cost of labor shall include any payment to or on behalf of the worker for health and welfare, pension, vacation and similar purposes. Where subsistence and travel allowances are required for performance of extra work, the charges shall consist of the actual amount paid to each worker. No other fixed labor burdens will be considered unless approved in writing by the Owner.
2. Material delivered and used on the designated work, including sales tax, if paid by the Contractor or his subcontractor.
3. Rental or equivalent rental cost of equipment, including necessary transportation, for items having a value in excess of \$200. When equipment is not rented, the equivalent rental cost of equipment shall be based on the standard rental rate for Contractor-owned equipment, but in no event shall exceed the locally adjusted rental rates set forth in the "Rental Rate Blue Book for Construction Equipment" and the

"Rental Rate Blue Book for Older Construction Equipment" which are published by the Equipment Guidebook Company, P. O. Box 10113, Palo Alto, California 94303. For equipment not listed in said documents, the rental rate shall be as listed for the local section of the Associated General Contractors. If the equipment is not listed by the Associated General Contractors, the rental rate will be mutually agreed upon in writing between the Contractor and the Owner prior to the use of said unlisted equipment. The reasonable cost of moving equipment onto and off the jobsite shall be included, but equipment rental shall not be paid when the equipment is inoperative due to breakdowns. Individual pieces of equipment or small tools considered as included in the overhead allowance and no additional payment therefor shall be made.

When equipment is used on the extra work for less than five (5) days, daily rates shall be used. When equipment is used on the extra work for more than four (4) days, weekly rates shall apply. Less than four (4) hours of operation shall be considered to be 1/2 day of operation. More than 5 hours of operation shall be considered a day if performed on a single day. Less than thirty (30) minutes of operation shall be considered 1/2 hour of operation.

Rental or equivalent rental cost will be allowed for only those days or hours during which the equipment is in actual use. Rental and transportation allowances shall not exceed the current equipment cost and shall be understood to cover all fuel, supplies, repairs, and renewals.

The Owner reserves the right to furnish such materials and equipment as he deems expedient and the Contractor shall have no claim for profit or added fees on the cost of such materials and equipment.

4. Refer to Office of Multimodal Commerce General Provisions Section 10, Measurement and Payment, for compensation.

If a dispute occurs over payment for work provided on a time and material basis, the dispute shall not be cause of stopping work.

The Contractor shall maintain accurate records for all work performed on a time and material basis. These records will reflect all the actual necessary expenses pertaining to the extra work and shall at all times be available for audit by the Owner.

The Contractor's records shall make clear distinction between the direct costs of work paid for on a time and material basis and costs of other work. The Contractor shall furnish the Engineer report sheets in duplicate of each day's work. The daily report sheets shall itemize the labor, materials and equipment used. The daily report sheets shall provide names, identifications and classifications of workers, the hours worked, the sizes, types and identification numbers of equipment, and hours

operated. Daily report sheets shall be signed by the Contractor or his authorized agent and verified by the Engineer.

To receive partial payments and final payment for time and materials work, the Contractor shall submit to the Engineer in a manner approved by the Engineer, detailed and complete documented verification of the Contractor's and any of his subcontractor's actual costs incurred. Material and rental charges shall be substantiated by copies of vendor's invoices. Such costs shall be submitted within thirty (30) days after said work has been satisfactorily completed.

E. Procedure for Plan Change

1. Contractor will write letter to Engineer requesting and explaining their reason for plan change.
2. Engineer will review items and prepare Plan Change based on approved items.
3. Engineer will submit a copy to Port for comments and approval.
4. Engineer will sign plan change after approval.
5. Contractor will come to Engineer and sign plan change.
6. Engineer will send plan change to Port attached with a letter addressed to Port briefly explaining reason and approval of plan change, copy of Contractors letter, and Engineer's letter.
7. Port will sign plan change.
8. Port will send a copy of final signed plan change to Engineer.

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

NOT USED

END OF SECTION

SECTION 01040 – COORDINATION  
STATE PROJECT No. H.013125 (321)

PART 1 - GENERAL

1.01 Requirements Included

Coordination of Work of Contract.

Coordination with the Owner's separate contractors, if any, and the Owner's installers and employees: The Contractor of this project shall closely coordinate with any and all contractors at the site.

1.02 Related Requirements

Section 01200 - Project Meetings.

Section 01600 - Material and Equipment.

Section 01700 - Contract Closeout.

1.03 Description of System

Coordinate scheduling and work of the various sections of Specifications to assure efficient and orderly sequence of installation of construction elements, with provisions for accommodating items to be installed later.

1.04 Meetings

In addition to progress meetings specified in Section 01200, Project Meetings, hold coordination meetings and pre-installation conferences with personnel, manufacturer's representatives, and subcontractors to assure coordination of Work.

1.05 Coordination of Submittals

Schedule and coordinate submittals specified in Section 01300, Submittals.

Coordinate work of various trades having interdependent responsibilities for installing, connecting to, and placing systems in service.

Coordinate requests for substitutions to assure equivalency and effect on work of other sections.

1.06 Contractors' Access for the Construction

The Contractor will be allowed to use the main roadway through security gate.

The Contractor will have access and can store his materials in a staging area that shall be limited in size, adjacent to the work site at a location acceptable to the Owner and Tenant.

1.07 Coordination Between The Contractors and The Port of South Louisiana

Port of South Louisiana is the Owner and the contact person is:

Mr. Paul Matthews  
Executive Director  
Port of South Louisiana  
985-652-9278

ADM Growmark contact person is:

Mr. Ryan Mills  
Assistant Operations Manager  
ADM Growmark  
504-275-4016

1.08 Coordination of Contract Closeout

Coordinate completion and cleanup of work of separate sections in preparation for Substantial Completion.

Assemble and coordinate close-out submittals as specified in Section 01700, Contract Closeout, and in accordance with the latest edition of the Procedures Manual for projects funded by Louisiana Port Construction & Development Program published by LADOTD Office of Multimodal Commerce.

Prepare detailed As-Built Drawings.

Follow requirements of Engineering Directives and Standards Manual, by LADOTD Office of Engineering, Latest Edition.

Compile, organize and prepare all documents required for the submittal of the State Sampling Plan.

1.09 Work Hours

Construction activities on site shall be limited to daylight hours only with work beginning no earlier than 6:00 am each day. The Contractor shall follow all local codes and ordinances regarding noise during and outside of work hours as required. The Contractor

shall obtain prior approval from the Owner and Engineer for any construction activities proposed to be performed outside of the approved daylight hours of operation.

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

NOT USED

END OF SECTION

SECTION 01043 – JOB SITE ADMINISTRATION  
STATE PROJECT No. H.013125 (321)

PART 1 – GENERAL

1.01 Description of Responsibilities

Contractor shall be responsible for all areas of the site used by him, and all Subcontractors in the performance of the Work.

Contractor shall cooperate with any and all other Contractors.

Contractor will exert full control over the actions of all employees and other persons with respect to the use and preservation of property and existing facilities, except such controls as may be specifically reserved to Owner, Tenant or others.

Contractor has the right to exclude from the site all persons who have no purpose related to the Work or its inspection, and may require all persons on the site (except Owner's or Tenant's employees) to observe the same regulations as he requires of his employees.

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

NOT USED

END OF SECTION

SECTION 01070 – ABBREVIATIONS, SYMBOLS, TRADE NAMES AND MATERIALS  
STATE PROJECT No. H.013125 (321)

PART 1 – GENERAL

1.01 Description

This Section of the Specifications lists many of the trade associations and general standards which are referenced in the Specifications, along with the abbreviations commonly used for these references. This also specifies certain general requirements for the Work, in relation with standards, and with trade associations and their published recommendations. Refer to individual Specification Sections for names and abbreviations of other trade associations and standards which are referenced less repeatedly.

1.02 Abbreviations and Names

The following abbreviations as referenced in the Contract Document are defined to mean the associated names.

AASHTO	American Association of State Highway and Transportation Officials
ACI	American Concrete Institute
AGA	American Gas Association
AGMA	American Gear Manufacturers Association
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
ANSI	American National Standards Institute
ASCE	American Society of Civil Engineers
ASHRAE	American Society of Heating, Refrigerating, and Air Conditioning Engineers
ASTM	American Society for Testing and Materials
ASME	American Society of Mechanical Engineers
AWPA	American Wood Preservers Association
AWS	American Welding Society
AWWA	American Water Works Association
CIPRA	Cast Iron Pipe Research Association
CRSI	Concrete Reinforcing Steel Institute
Fed. Spec.	Federal Specification
IEEE	Institute of Electrical and Electronic Engineers
IES	Illuminating Engineering Society
LADOTD	Louisiana Department of Transportation and Development
NEC	National Electric Code
NEMA	National Electrical Manufacturers Association
NFPA	National Fire Protection Association
OSHA	Occupational Safety and Health Administration
POSL	Port of South Louisiana



SAE Society of Automotive Engineers  
UL Underwriters Laboratories, Inc.

### 1.03 Quality Assurance

#### A. General Applicability Standards

Except where more explicit or more stringent requirements are specified or are required by governing regulations, applicable standards of the construction industry have the same force and effect for the Work; and are made a part of the Contract Documents by reference, as if copied directly into the Contract Documents, or as if published copies were bound herewith.

#### B. Referenced Standards

Referenced standards shall have precedence over nonreferenced standards, which are intended by the manufacturer for application to work similar to that required on the Project.

#### C. Non-referenced Standards

Industry standards not specifically referenced for applicability to the Work, including standards listed in this Section but not referenced elsewhere, have no particular applicability to the work, except as a general measurement of whether the performed work complies with standards of construction industry.

#### D. Comply with the standard which was in effect at the date of bidding except where specifically indicated to comply with a publication of another date.

#### E. Copies of Standards

In general, copies of applicable standards have not been bound with the Contract Documents. Where copies of standards are needed for proper performance of the Work, the Contractor is required to obtain such copies directly from the publication source.

## PART 2 – PRODUCTS

NOT USED

## PART 3 – EXECUTION

NOT USED

END OF SECTION

SECTION 01090 – REFERENCE STANDARDS AND DEFINITIONS  
STATE PROJECT No. H.013125 (321)

PART 1 – GENERAL

1.01 Related Requirements

NOT USED

1.02 Reference Standards

Reference to the standards of any technical society, organization, or association, or to codes of local or state authorities, shall mean the latest standard, code, specification, or tentative standard adopted and published at the date of receipt of bids, unless specifically stated otherwise.

1.03 Project Definitions

- A. OWNER - The Owner of the subject project is Port of South Louisiana.
- B. ENGINEER - The Engineer of the subject project is LANIER.
- C. TENANT – ADM Growmark

1.04 Definitions

- A. ADDENDUM - A Written revision, correction, interpretation, clarification or supplement to the plans, specifications or other contract documents issued by authority of the Engineer prior to opening bids, which will become a part of the contract.
- B. ADVERTISEMENT - A public announcement inviting bids for work to be performed or materials to be furnished.
- C. ADVERTISEMENT FOR BIDS - The advertisement for proposals for all work or materials on which bids are required. Such advertisement will indicate location and description of the work, and time and place of opening bid proposals.
- D. BIDDER - An individual, partnership, firm, corporation, or any acceptable combination thereof, or joint venture submitting a proposal.
- E. CALENDAR DAY - Every day shown on the calendar, beginning and ending at midnight.

- F. **CONTRACT** - The written agreement between Owner and the Contractor setting forth obligations of the parties thereunder, for performance of the prescribed work.
1. The contract includes the invitation for bids, proposal, contract form and contract bond, specifications, supplemental specifications, special provisions, general and detailed plans; also, any plan changes and supplemental agreements that are required to complete construction of the work in an acceptable manner, including authorized extensions thereof, all of which constitute one instrument.
- G. **CONTRACT BOND** - The approved form of security, executed by the Contractor and his surety or sureties, guaranteeing complete execution of the contract and all supplemental agreements pertaining thereto and payment of all legal debts pertaining to construction of the project.
- H. **CONTRACT ITEM (Pay Item)** - A specific unit of work for which a price is provided in the contract.
- I. **CONTRACTING AGENCY** - Council or other governing authority of a Parish, State Office, Agency, Board, Commission, Public Corporation or other political subdivision of the State, in whose name the contract will be executed. The Contracting Agency is further defined in the Notice to Contractors.
- J. **CONTRACTOR** - The individual, partnership, firm, corporation or any acceptable combination thereof, or joint venture contracting for performance of prescribed work.
- K. **EQUIPMENT** - All machinery and equipment, with the necessary supplies for upkeep and maintenance, and also tools and apparatus necessary for proper construction and acceptable completion of the work.
- L. **EXTRA WORK** - An item of work not provided for in the contract as awarded but found essential by the Owner for satisfactory completion of the contract within its intended scope.
- M. **HIGHWAY, STREET OR ROAD** - A general term denoting a public way for purposes of vehicular travel, including the entire area within the right-of-way. Recommended usage in urban areas - highway or street; in rural areas - highway or road.
- N. **INSPECTOR** - The Owner's authorized representative assigned to make detailed inspections of contract performance.
- O. **LABORATORY** - The Owner's testing laboratory or any other testing laboratory approved by the engineer.

- P. MATERIALS - Any substances specified for use in the construction of the project and its appurtenances.
- Q. NOTICE TO PROCEED - Written notice to the Contractor to proceed with the contract work, including the date of beginning of contract time.
- R. PARISH - The Parish in which the specified work is to be done.
- S. PLAN CHANGE - A general term denoting changes to the contract.
- T. PLANS - The contract drawings which show location, type, and dimensions of the prescribed work and may include layouts, profiles, cross sections and other details.
- U. PROJECT - A specific undertaking of construction as described by the plans and specifications within prescribed limits.
- V. PROPOSAL - The offer of a bidder, on the prescribed form, to perform the stated work and to furnish the labor and materials at the prices quoted.
- W. PROPOSAL FORM - The prescribed form on which the offer of a bidder must be submitted.
- X. PROPOSAL GUARANTY. The required security furnished with a bid proposal.
- Y. RIGHT-OF-WAY - Land, property or interest therein, reserved for use in constructing, maintaining and protecting an improvement.
- AA. SPECIAL PROVISIONS - Additions and revisions to the standard and supplemental specifications covering conditions applicable to the project.
- BB. SPECIFICATIONS - The compilation of provisions and requirements for the performance of prescribed work.
1. Standard Specifications - A book of specifications for general application and repetitive use.
  2. Supplemental Specifications - Additions and revisions to the Standard Specifications.
  3. Project Specifications - All Standard Specifications, Supplemental Specifications, Technical Specifications, Special Provisions and other provisions that are applicable to the project.

4. Technical Specifications - Requirements pertaining to specific items or methods of performing the work and to quantities and qualities of materials to be furnished, and shall be considered part of the contract.
- CC. SPECIFIED - Set forth or stipulated in the plans or specifications or elsewhere in the contract documents; such as materials, equipment or methods.
- DD. STATE - The State which the project is being constructed or the Governing body of this state acting through its authorized representative.
- EE. STRUCTURES - Bridges, culverts, catch basins, junction boxes, retaining walls, cribbing, manholes, endwalls, buildings, sewers, dams, floodgates, plumbing stations, docks, wharves, levees, boat ramps, pile dolphins, jetties, service pipes, underdrains, foundation drains and other features encountered in the work and not otherwise classed herein.
- FF. SUBCONTRACTOR - An individual, partnership, firm, corporation, or any acceptable combination thereof, or joint venture, to which the Contractor sublets part of the contract.
- GG. SUBGRADE - The surface of a foundation layer upon which the pavement structure and shoulders are constructed.
- HH. SUBSTRUCTURE - That part of the structure below the bearings of simple and continuous spans, skewbacks or arches and tops of footings or rigid frames, including backwalls, wingwalls and wing protection railings.
- II. SUPERINTENDENT - The Contractor's authorized representative in responsible charge of the work.
- JJ. SUPERSTRUCTURE - The entire structure above the substructure including but not limited to the deck, girders, bearings, deck drainage system, etc..
- KK. SUPPLEMENTAL AGREEMENT - A written agreement made and entered into by and between the Contractor and the Owner covering work not otherwise provided for, revisions in or amendments to terms of the contract or conditions specifically prescribed in the specifications as requiring supplemental agreements. Such supplemental agreement becomes a part of the contract when approved and properly executed.
- LL. SURETY - The corporation, partnership or individual, other than the contractor, executing a bond furnished by the contractor.

## PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

NOT USED

END OF SECTION

SECTION 01152 – APPLICATIONS FOR PAYMENT  
STATE PROJECT No. H.013125 (321)

PART 1 – GENERAL

1.01 Description

Submit applications for payment to Engineer in accordance with the established schedule of payments required by Conditions of the Contract and Agreement between Owner and Contractor.

Adhere to all applicable requirements indicated in - Progress Payments, Retainages and Final Payment clauses in the Conditions of the Contract.

Within 30 days after award of contract, Contractor shall furnish to Engineer a schedule of estimated monthly payments. The schedule shall be revised and submitted each time an application for payment varies more than 10 percent from the estimated payment schedule.

1.02 Related Requirements

Section 01310 - Construction and Progress Schedules

Section 01700 - Contract Closeout

1.03 Format and Data Required

Submit itemized applications on completed Application and Certificate for Payment. Blank forms shall be supplied by the Engineer.

Provide itemized data on continuation sheets:

1. Format, schedules, line items and values: Those of the Schedule of Values approved by Engineer.

A progress report shall accompany all applications.

Copies of all certificates and test reports required by State Sampling Plan for work being invoiced. Contractor shall retain original document to be turned over at closeout.

1.04 Preparation of Application for Each Progress Payment

A. Application Form:

1. Fill in required information, including that for Change Orders executed prior to the date of submittal of application.

2. Fill in summary of dollar values to agree with the respective totals indicated on the continuation sheets.
3. List all on site stored items.
4. List of all responsible members and officers of the construction company.
5. Execute certification with the signature of an authorized, responsible officer of the Contract firm as required by Owner and Engineer.

B. Continuation Sheets.

1. Fill in total lists of all scheduled component items of Work, with item number and the scheduled dollar value for each item.
2. Fill in the dollar value in each column for each scheduled line item when work has been performed or products stored.
  - a. Round off values to the nearest dollar, or as specified for the Schedule of Values.
3. List each Change Order executed prior to the date of submission, at the end of the continuation sheets.

Progress Reports shall conform to requirements of Section 01320, Progress Reports.

Sampling Plan:

Copies of all certificates and test reports required for State Sampling Plan associated with the completed work.

1.05 Substantiating Data for Progress Payments

When the Owner or the Engineer require substantiating data, to justify dollar amounts Contractor shall submit suitable information, with a cover letter identifying:

1. Project.
2. Application number and date.
3. Detailed list of enclosures, including invoices.
4. Information for stored products including:



- a. Item number and identification as shown on application.
- b. Description of specific material.

Submit one copy of data and cover letter for each copy of application.

1.06 Preparation of Application for Final Payment

Fill in Application form as specified for progress payments.

Use continuation sheet for presenting the final statement of accounting as specified in Section 01700, Contract Closeout.

1.07 Submittal Procedure

Submit Applications for Payment to Engineer at the times stipulated in the Agreement.

Number: Five (5) copies of each Application.

When Engineer finds the Application properly completed and correct, he will transmit a certificate for payment to Owner

All payment requests or invoices must be sent first to the Engineer for review and comment on the proper forms, which are then forwarded to the Owner. Payment will be made to the contractor after the Owner approves the payment certificate. Contractors who fail to follow this procedure will not be paid on a timely basis due to the unnecessary delays in re-routing the payment requests.

1.08 Retainage

The Owner agrees to make payment to its Contractor promptly sums due under this contract and to retain only such amounts as may be justified by specific circumstances specifically provided for in the construction contract, to the following schedule:

1. Retention of up to ten (10) percent of payments for projects with contract prices of less than \$500,000.
2. Retention of five (5) percent of payments for projects with contract prices of \$500,000 or more.

1.09 Total Payment

Wherever an item of work to be performed under this contract is specified in any of the bid documents as being paid at an item total price, the Contractor shall be paid the entire amount that appears in his bid proposal for that item.

Wherever the estimated quantities (i.e., cubic yards of sand, shell, etc.) of materials to be furnished under this contract are shown in any of the documents, including the Proposal, they are given for use in comparing bids and are not to be construed as exact quantities. The Owner reserves the right to increase or diminish these quantities as may be necessary to complete the work contemplated by this contract. The Contractor shall be paid for the actual quantity of items or material used, and payment will be at the respective unit price bid for these items or materials.

The sum of the products of approximate quantities multiplied by the unit price bid, constitute the total base bid price or total alternate bid price. The contract will be awarded to the lowest responsible bidder based on the amount provided on the Louisiana Uniform Public Work Bid Form for Base Bid and/or Alternates”.

It shall be understood that the total base bid or alternate bid price figure, wherever specified in the bid document, may not reflect the actual amount the Contractor will receive upon completion of the work. This figure shall be adjusted in accordance with the actual quantity of unit price items used.

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

NOT USED

END OF SECTION

SECTION 01200 – PROJECT MEETINGS  
STATE PROJECT No. H.013125 (321)

PART 1 – GENERAL

1.01 Work Included

The Owner's Representative will schedule and administer pre-bid and pre-construction meetings, periodic progress meetings, and specially called meetings throughout the progress of the work.

1. Specially called meetings may be held at the job site during normal working hours, as necessary to expedite the progress of the job.

The Owner's Representative shall direct individuals attending the meeting to:

1. Prepare agenda for meetings.
2. Distribute written notice of each meeting.
3. Preside at meetings.
4. Record the minutes; include all significant proceedings and decisions.
5. Reproduce and distribute copies of minutes.

Representatives of Contractors, subcontractors and suppliers attending the meetings shall be qualified and authorized to act on behalf of the entity each represents.

1.02 Pre-Construction Meeting

After notification that the contract has been executed and prior to the commencement of the Work at the site, the Owner's Representative shall arrange with the Owner, Engineer and the Contractor to conduct a Pre-Construction Conference.

Location: Project site or where directed by the Owner's Representative.

Attendance:

1. Owner's Representative and tenant, if deemed appropriate by the Owner.
2. Engineer, his/her Professional Consultants, and his/her Project Representative.
3. Contractor.
4. Contractor's Superintendent.
5. Principal Subcontractors.
6. Principal Suppliers and manufacturer's representatives as appropriate
7. Governmental representation as appropriate.
8. Others as Appropriate.

The Contractor shall coordinate and be responsible for the attendance of his principal Subcontractors.

Unless previously submitted to the Engineer, the Contractor shall furnish at the time of the pre-construction meeting to the Owner's Representative and the Engineer six (6) copies of the following documents:

1. Schedule of Values.
2. List of Subcontractors.
3. List of major material suppliers.
4. Construction Schedule.
5. Shop Drawings and Submittal Schedule.

The purpose of the conference is to designate responsible personnel and establish a working relationship. Matters requiring coordination will be discussed and procedures for handling such matters established. The agenda will include:

1. Contractor's tentative schedules.
2. Transmittal, review, and distribution of Contractor's submittals.
3. Processing applications for payment. Application format.
4. Maintaining record documents.
5. Critical Work sequencing.
6. Field decisions and Change Orders.
7. Use of premises, office and storage areas, security, housekeeping, and Owner's needs.
8. Major equipment and materials deliveries and priorities.
9. Contractor's assignments for safety and first aid.
10. Submittal of executed bonds and insurance certificates, if not previously submitted.

The Owner's representative will preside at the conference and will arrange for keeping the minutes and distributing the minutes to all persons in attendance.

### 1.03 Progress Meetings

Progress meetings will be scheduled by the Owner's Representative or the Engineer after consulting with the Owner. These meetings shall be no more often than one per week as required by progress of the work, exclusive of any other meetings scheduled by the Owner's Representative, Owner or Using Agency.

1. It shall be the responsibility of the Owner's Representative to notify the Owner, Using Agency, and the Contractor of the time, place and date of the "Progress Meetings".
2. It shall be the responsibility of the Contractor to notify all suppliers and subcontractors and other interested parties of any scheduled meetings and called meetings.

The purpose of these regular meetings is to assess, realistically, the current status and progress of the work, to effect coordination, cooperation and assistance in every practical way and to discuss changes in scheduling, and to resolve other problems which may develop. This should maintain the progress of the project on schedule and complete the project within the contract time.

These meetings will be called as required during progress of the work.

Location of the meetings: The project field office/site or other location where directed by the Owner's Representative.

Attendance:

1. Owner's representative.
2. Tenant if deemed appropriate by Owner.
3. Engineer, his professional consultants, and his Project Representative.
4. Contractor.
5. Contractor's Superintendent.
6. Principal Subcontractors, and all subcontractors active on the site.
7. Principal Suppliers and Manufacturer's Representatives.
8. Others as appropriate.

Suggested Agenda:

1. Review and approve minutes of previous meeting.
2. Review of work progress since previous meeting.
3. Note field observations, problems, conflicts.
4. Identify problems which impede Construction Schedule.
5. Review off-site fabrication, delivery schedules.
6. Develop corrective measures and procedures to regain projected schedule.
7. Revise Construction Schedule as required.
8. Plan progress, schedule, during succeeding work period.
9. Coordination of schedules.
10. Review submittal schedules; expedite as required to maintain schedule.
11. Review maintenance of quality and work standards.
12. Review proposed changes for the effect on Construction Schedule, completion date, and coordination.
13. Complete other current business.
14. Review of Contractor's progress.

#### 1.04 Project Meetings

Where inspections of in-place work are specified, where Engineer's approval is required before further work can take place, or where records of procedures are specified; Contractor shall schedule inspection with Engineer or his designated representative, given no less than 24 hours notice.

Where daylight or installed project lighting, at areas to be inspected, is less than 30 candle power, provide 30 candle power light level by temporary lighting.

## PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION  
NOT USED

END OF SECTION

SECTION 01300 – SUBMITTALS  
STATE PROJECT No. H.013125 (321)

PART 1 – GENERAL

1.01 Related Requirements

A. DIVISION 0

B. DIVISION 1

1.02 Description

To illustrate or verify constructions and conditions in greater detail and preciseness than that which is the standard of practice for Contract Documents, engineering data covering all equipment and fabricated materials to be furnished under this contract shall be submitted to the Engineer for review after the Contractor verifies all applicable field measurements, quantities, dimensions, performance criteria, conformance with specifications, etc. This data shall include drawings and descriptive information in sufficient detail to show the kind, size, arrangement, and operation of component materials and devices; the external operation of connections, anchorages, and supports required, wiring diagrams; piping diagrams; controls; performance characteristics and capacities; and dimensions and clearances needed for installation and correlation with other materials and equipment. If manufacturer's standard drawings, catalog cut sheets, technical data sheets, or specifications are submitted, modify and delete information which is not applicable to the Work. Drawings shall be clear and thorough. Engineer will not be required to review incomplete submittals. Submittals which are either a repeat of what appears on the Contract Documents or a direct copy of the Contract Documents are incomplete submittals and will not be reviewed.

Prior to submitting to the Engineer, all submittals, regardless of origin, shall be stamped and signed with the approval of Contractor and identified with the name and number of this contract, Contractor's name, date, and references to applicable specification paragraphs and Contract Drawings. By approving Submittals, Contractor represents that he has determined and verified all materials, field measurements, quantities, catalog numbers and similar data, and field construction criteria related thereto and that he has checked and coordinated the information within the submittal with the requirements of the Work. Contractor shall verify conformance of all data with the specifications in a separate review prior to submittal of same to Engineer. Each submittal shall indicate the intended use of the item in the Work, date of submittal, Project title, Contractor name, name of company performing work on shop drawings, manufacturer's name, and field dimensions. When catalog pages are submitted, applicable items shall be clearly identified. The current revision, issue number, and date shall be indicated on all drawings and other descriptive data. Submittals shall reference sheet and/or section numbers of the Contract Documents to which they relate.

## Submittals

1. Submission Requirement: Schedule submissions at least thirty (30) calendar days before dates on which reviewed submittals will be needed. Submit samples in number and size specified in each Specification Section. Accompany submittals with transmittal letter, in duplicate, containing the following.
  - a. Date.
  - b. Project Title and Number.
  - c. Contractor's Name and Address.
  - d. The number of each Shop Drawing, Project Datum, and Sample submitted.
  - e. Notification of deviations from Contract Documents.
  - f. Other pertinent data.
  
2. Submittals: Submittals shall include the following information:
  - a. Date and revision dates.
  - b. Project Title and Number.
  - c. The names of:
    - I. Engineer
    - II. Contractor
    - III. Subcontractor
    - IV. Supplier
    - V. Manufacturer
  - d. Identification of product or material.
  - e. Relation to adjacent structure or materials.
  - f. **Field dimensions, clearly identified as such.**
  - g. Specification Section number.
  - h. Applicable standards, such as ASTM number or Federal Specification.
  - i. A blank space 4" x 5" for Engineer's stamp.
  - j. Identification of deviation from Contract Documents (if any.)
  - k. Contractor's stamp, initialed certifying to review of submittal, verification of field measurements and compliance with Contract Documents.
  - l. **Design calculations stamped by a registered professional engineer where noted.**

All deviations from the Contract Documents shall be specifically and clearly identified on each submittal and shall be explained and tabulated in Contractor's letter of transmittal. Such submittals shall, as pertinent to the deviation, indicate essential details of all changes proposed by Contractor (including modifications to other facilities that may be a result of the deviation) and all required piping and wiring diagrams.

Contractor shall accept full responsibility for the completeness of each submission, and, in the case of a resubmission, shall verify that all exceptions previously noted by Engineer have been taken into account. In the event that more than one resubmission is required because of failure of Contractor to account for exceptions previously noted,



Contractor shall reimburse Owner for the charges of Engineer for review of the additional resubmission.

Make submittals promptly and in such sequence as to cause no delay in the Work. Allow sufficient time for re-submissions, should the need arise. Any need for more than one re-submission, or any other delay in obtaining the Engineer's review of submittals, will not entitle Contractor to extension of the Contract Time unless delay of the Work is directly caused by a change in the Work authorized by a Change Order or by failure of Engineer to return any submittal within fourteen (14) calendar days after its receipt in the Engineer's office. This time period does not include any transmission or mailing time.

Engineer's review of drawings and data submitted by Contractor will cover only general conformity and compliance with the Contract Documents. Engineer's review does not indicate a thorough review of all dimensions, quantities, and details of the material, equipment, device, or item shown. Engineer's review of submittals shall not relieve Contractor from responsibility for errors, omissions, or deviations, or responsibility for compliance with the Contract Documents. The Contractor is responsible for confirming and correlating all quantities and dimensions, selecting fabrication processes and techniques of construction; coordinating his work with that of all other trades, and performing his work in a safe and satisfactory manner. No responsibility will be assumed by the Engineer for correctness of dimension, quantities, or details. Contractor shall check and verify all field measurements and be solely responsible for same.

One (1) copy of each drawing and necessary data shall be submitted to Engineer. Engineer will not accept submittals from anyone but Contractor. Submittals shall be consecutively numbered in direct sequence of submittal and without division by subcontracts or trades. Resubmittals shall bear the number of the first submittal followed by a letter (A, B, etc.,) to indicate the sequence of the resubmittal.

When the drawings and data are returned marked REJECTED or REVISE AND RESUBMIT, the corrections shall be made as required, as noted thereon, and as indicated by Engineer and five corrected copies (or one corrected reproducible copy) shall be resubmitted. Commence no portion of work requiring submittals until submittal has been reviewed by Engineer.

When corrected copies are resubmitted, Contractor shall, in writing, direct specific attention to all revisions and shall list separately any revisions made other than those called for by Engineer on previous submissions. Resubmittals shall be clearly and obviously labeled as such. Resubmit until all drawings and data are returned marked REVIEWED or REVIEWED AS NOTED.

When the drawings and data are returned marked REVIEWED or REVIEWED AS NOTED, no additional copies need be furnished. Contractor is responsible for distributing copies to his subcontractors and material suppliers for field and shop use.

### 1.03 Samples

Samples shall be of sufficient size and quantity to:

1. Clearly illustrate the functional characteristics of the product with integrally related parts and attachment devices.
2. Clearly illustrate the full range of color texture, and pattern.
3. Serve as a sample for testing.
4. Establish standards by which completed work is judged.

Label each sample with identification required for transmittal letter.

### 1.04 Coordination

Coordinate each submittal with requirements of work and of Contract Documents. Contractor is responsible for deviations in submittals from Engineer's review of submittals, unless Engineer's gives written acceptance of specific deviations. Notify Engineer's in writing at time of submission of deviations in submittals from requirements of Contract Documents. Begin no work which requires submittals until submittals are received with Engineer's stamp and initials indicating review. After Engineer's review, distribute copies.

### 1.05 Submittal Review Schedule

Anticipated review time for all construction submittals shall be in general twenty one (21) consecutive business days. The Contractor shall coordinate with the Engineer to review all submittals and provide all required information in a timely manner. The Contractor shall plan their construction schedule based on this proposed review schedule and duration. Review of multiple submittals may run concurrently but could affect review period timeframe.

## PART 2 – PRODUCTS

NOT USED

## PART 3 – EXECUTION

### 3.01 Agreement in Production Of Submittals

Contractor agrees that Shop Drawing Submittals processed by the Engineer are not Change Orders; that the purpose of Shop Drawing Submittals by the Contractor is to demonstrate to the Engineer that the Contractor understands the design concept, that he demonstrates his understanding by indicating which equipment and material he intends to furnish and install and by detailing the fabrication and installation methods he intends to use.

Contractor further agrees that if deviations, discrepancies, or conflicts between Shop Drawing Submittals and the Contract Documents in the form of design drawings and specifications are discovered either prior to or after Shop Drawing Submittals are processed by the Engineer, the design drawings and specifications shall control and shall be followed.

END OF SECTION

SECTION 01310 – CONSTRUCTION AND PROGRESS SCHEDULES  
STATE PROJECT No. H.013125 (321)

PART 1 – GENERAL

1.01 Work Included

The Contractor shall prepare and submit to the Engineer at the Preconstruction Conference and on a monthly basis, estimated construction progress schedules for the Work with sub-schedules of related activities which are essential to its progress. The computer software system utilized by the Contractor to produce the Project Schedule shall be capable of providing all requirements of this specification. Failure of the Contractor to meet the requirements of this specification shall result in the disapproval of the schedule. The Critical Path Method (CPM) of network calculation shall be used to generate the Project Schedule. Provide a minimum of one (1) copy.

1.02 Related Work

Section 01010 - Summary of Work

Section 01152 - Applications for Payment

Section 01200 - Project Meetings

Section 01340 - Shop Drawings, Engineering Data, Product Data and Samples

1.03 Format of Schedules

Prepare schedules in the form of a CPM bar chart, such as Primavera or Microsoft Project.

Provide separate horizontal bar for each trade or operation.

Identify the first workday of each week and of commencement of each Work Phase.

Scale and spacing shall allow space for notations and future revisions.

Minimum sheet size: 11" x 17".

Format of listings shall match the table of contents of this Project Manual.

Listings shall be in the chronological order of the start of each item of work.

Listings shall be identified by major specification section numbers.

Listings of items other than major equipment shall include values of each item or portion of work which will not exceed \$50,000.

All items of work on the critical path shall be clearly indicated.

#### 1.04 Content of Schedules

Show the complete sequence of construction by activity.

Show a list of Preceding and Succeeding activities for every activity in ascending order by activity number.

Show the dates for the beginning and completion of each major element of construction and each Work Phase. Contractor shall include and identify separately the time necessary for startup, testing, training and commissioning of each item of operating equipment and the combination of equipment into operating systems.

Show projected percentage of completion for each item, as of the first day of each month.

Show values for each item and accumulated values completed at the stages indicated.

Show the Actual Start and Actual Finish dates for each activity currently in-progress or completed.

Show the estimated Remaining Duration for each activity in-progress. Time-based progress calculations shall be based on Remaining Duration for each activity.

#### 1.05 Submittals

Submit one (1) copy of the initial schedule at the Preconstruction meeting in addition to an electronic copy.

Submit one (1) copy revised progress schedules monthly with requests for payment in addition to an electronic copy.

Submit Schedule for Shop Drawings, Product Data and Samples monthly with requests for payment until completion of submittals process.

Include progress reports with each submittal.

#### 1.06 Revisions to Schedules

Indicate progress of each activity to date of submittal, and projected completion date of each activity.

Identify activities modified since previous submittal, major changes in scope, and other identifiable changes.

Provide narrative report to define problem areas, anticipated delays and impact on Schedule. Report corrective action taken, or proposed, and its effect, including the effect of changes on schedules of separate contractors.

In the event the Contractor requests an extension of the contract completion date, or any interim milestone date, the Contractor shall furnish the following for a determination as to whether or not the Contractor is entitled to an extension of time under the provisions of the contract: justification, project schedule data, and supporting evidence as the Engineer may deem necessary. Submission of proof of delay, based on revised activity logic, duration, and costs (updated to the specific date that the delay occurred) is obligatory to any approvals.

The project schedule shall clearly display that the Contractor has used, in full, all the float time available for the work involved with this request. The Engineer's determination as to the number of allowable days of contract extension shall be based upon the project schedule updates in effect for the time period in question, and other factual information. Actual delays that are found to be caused by the Contractor's own actions, which result in the extension of the schedule, will not be a cause for a time extension to the contract completion date.

#### 1.07 Distribution

Distribute copies of the reviewed schedules to the job site file, subcontractors, suppliers, and other concerned parties.

Instruct recipients to report promptly to the Contractor, in writing, any problems anticipated by the projections shown in the schedules.

### PART 2 – PRODUCTS

NOT USED

### PART 3 – EXECUTION

NOT USED

END OF SECTION

SECTION 01320 – PROGRESS REPORTS  
STATE PROJECT No. H.013125 (321)

PART 1 – GENERAL

1.01 Related Requirements

NOT USED

1.02 Description

A written progress report shall be furnished to Engineer with each application for progress payment. If the Work falls behind schedule, Contractor shall submit additional progress reports at such intervals as Engineer may request.

Each progress report shall include sufficient narrative to describe current and anticipated delaying factors, their effect on the construction schedule, and proposed corrective actions. Any Work reported complete, but which is not readily apparent to Engineer, must be substantiated with satisfactory evidence. Each progress report shall be on Contractor's letterhead and signed by the Contractor's representative.

Each progress report shall also include three prints of the accepted graphic schedule marked to indicate actual progress.

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

NOT USED

END OF SECTION

SECTION 01380 – CONSTRUCTION PHOTOGRAPHS  
STATE PROJECT No. H.013125 (321)

PART 1 – GENERAL

1.01 Related Work

NOT USED

1.02 Description

The Contractor shall be responsible for the production of construction photographs showing the regular progress of the Work. The Engineer shall be able to designate the subject of additional photographs as required.

Before commencement of the Work and continuing through the duration of the contract, the Contractor shall take photos consisting of different subjects or angles of view for each photo. The photo shall be taken from various locations on the construction site for adequate documentation of the Work. The Contractor shall take photos at the completion of the Work as directed by the Engineer. All photographs shall be furnished to the Engineer within two (2) weeks.

Contractor shall submit photos on a CD to the Owner and Engineer along with monthly pay requests.

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

NOT USED

END OF SECTION



SECTION 01390 - PRE AND POST SURVEYS  
STATE PROJECT No. H.013125 (321)

PART 1 - GENERAL

1.01 Description of Work

This Section of the Specifications details requirements of work and materials to be used in connection with Pre and Post Surveys in accordance with the items of work shown on the plans and as specified herein.

PART 2 - GENERAL

2.01 Referenced Standards

All work for Pre and Post Surveys shall be in accordance with Section 740, Construction Layout of "Louisiana Standard Specifications for Roads and Bridges", 2016 Edition.

PART 3 - EXECUTION

3.01 Pre and Post Surveys

Perform pre and post survey in accordance with Section 740, Construction Layout of "Louisiana Standard Specifications for Roads and Bridges", 2016 Edition as specified.

3.02 Field Survey, Field-Verification and Condition Assessment

The information on the drawings concerning type and location of structural members and utilities may not be accurate or all inclusive. Location of existing structural members and utilities were determined from available existing as-built drawings, utility maps and survey data. The locations should be considered approximate and field verified by contractor, prior to construction. Any discrepancies shall be reported to the owner and engineer prior to commencing work. The contractor shall be responsible for laying out the work and verifying all existing conditions, dimensions, elevations, members and drainage slopes prior to beginning of construction. It shall be the responsibility of the contractor to establish the project centerline and additional temporary bench marks for construction purposes.

END OF SECTION

SECTION 01395 – SAFETY PLAN  
STATE PROJECT No. H.013125 (321)

PART 1 – GENERAL

1.01 Submittals

Prior to commencing any work, the Contractor shall submit to the Port for their review his safety plan. Such review is to demonstrate that the Contractor has fulfilled the requirements of this section.

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

3.01 Safety Expectations

Below is a list of the bare minimum Port of South Louisiana "Safety" expectations for every Contractor doing business at the Port that shall be included and addressed in the Safety Plan.

Each Contractor must enforce the wearing of Personal Protective Equipment (PPE). This includes but is not limited to the following:

1. Head Protection
2. Eye and Face Protection
3. Ear Protection
4. Respiratory Protection
5. Torso Protection
6. Arm and Hand Protection
7. Foot and Leg Protection
8. Life Jackets when applicable

Each Contractor must have someone, on site at all times, skilled in First Aid and CPR.

Each Contractor must enforce all applicable confined entry space safety requirements.

Each Contractor must conduct or cause to be conducted weekly safety meetings. The meetings shall involve the General Contractor's Safety Officer and his employees along with any subcontractor's under the supervision of the General Contractor. This meeting shall consist of a discussion of the hazards, which may be encountered with said project.

The Contractor shall furnish the Resident Project Representative with an USCG approved work life jacket for his use for the duration of the project. The Contractor shall also furnish six (6) additional USCG approved work life jackets for use by the owner's and engineer's representatives.

### 3.02 OSHA Standards

It should be noted that the Port of South Louisiana, although not regulated by OSHA, strives to comply realizing that the OSHA standards are the minimum safety standards. It should also be noted that all of the Contractor's work for the Port of South Louisiana must abide by the applicable OSHA regulations.

END OF SECTION

SECTION 01400 – QUALITY CONTROL AND TESTING  
STATE PROJECT No. H.013125 (321)

PART 1 – GENERAL

1.01 Quality Control, General

Comply with industry standards except when more restrictive tolerances or specified requirements indicate more rigid standards or more precise workmanship on this project.

Perform work only by persons qualified by equivalent applicable union standards to produce workmanship of the specified quality.

Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, operating forces and racking.

Comply with manufacturer's instructions in full detail, including each step in sequence. Should instructions conflict with Contract Documents, notify and request clarification from Engineer before proceeding.

**The Contractor shall provide a suitable and stable temporary work platform and scaffolding as required for the Owner's testing agency to access the underside of the approachway structure to observe structural framing, repairs, demolition and installation of new work.**

1.02 Site Investigation and Control

**The Contractor shall verify all dimensions in the field and shall check field conditions continuously during construction. The Contractor shall be solely responsible for any inaccuracies built into the Work due to his failure to comply with this requirement.**

The Contractor shall inspect related, adjacent, and appurtenant Work and shall report in writing to the Engineer any conditions which will prevent proper completion of the Work. Failure to report any such conditions shall constitute acceptance of all site conditions, and any required removal, repair or replacement caused by unsuitable conditions shall be performed by the Contractor at its sole cost and expense.

1.03 Inspection of the Work

The Work shall be conducted under the general periodic observation of the Engineer and shall be subject to inspection by representatives of the Engineer acting on behalf of the Owner to insure strict compliance with the requirements of the Contract Documents. Such inspection may include mill, plant, shop or field inspection, as required. The Engineer shall be permitted access to all parts of the Work, including plants where materials or equipment are manufactured or fabricated.

The presence of the Engineer or any inspector(s), however, shall not relieve the Contractor of the responsibility for the proper execution of the work in accordance with all requirements of the Contract Documents. Compliance is a duty of the Contractor, and said duty shall not be avoided by any act or omission on the part of the Engineer or any inspector(s).

All materials and articles furnished by the Contractor shall be subject to rigid inspection, and no materials or articles shall be used in the Work until they have been inspected and accepted by the Owner or his representative. No Work shall be backfilled, buried, cast in concrete, hidden or otherwise covered until it has been inspected. Any Work so covered in the absence of inspector shall be subject to uncovering. Where uninspected work cannot be uncovered, such as in concrete cast over reinforcing steel, all such Work shall be subject to demolition, removal and reconstruction under proper inspection, and no additional payment will be allowed therefor.

#### 1.04 Time of Inspections and Tests

Samples and test specimens required under these Specifications shall be furnished and prepared for testing in ample time for the completion of the necessary tests, analyses and reporting of results before said articles or materials are to be used. The Contractor shall furnish and prepare all required test specimens at its own expense. Except as otherwise provided in the Contract Documents, performance of the required tests will be by the Owner, and all costs thereof will be borne by the Owner at no extra cost to the Contractor; except, that the costs of any tests which show unsatisfactory results shall be borne by the Contractor.

Whenever the Contractor is ready to backfill, bury, cast in concrete, hide or otherwise cover any work under the Contract, the Engineer shall be notified not less than 24 hours in advance to request inspection before beginning any such work of covering. Failure of the Contractor to notify the Engineer at least 24 hours in advance of any such inspections shall be reasonable cause for the Engineer to order a sufficient delay in the Contractor's schedule to allow time for such inspections and any remedial or corrective work required, and all costs of such delays, including its effect upon the progress of the work and upon other portions of the Work, shall be borne by the Contractor. Payment for items which are built uninspected or unverified may be delayed by the Engineer until satisfactory evidence of compliance is attained.

#### 1.05 Sampling and Testing

When not otherwise specified, all sampling and testing shall be in accordance with methods prescribed in the current standards of the ASTM or related standard entity, as applicable to the class and nature of the article or materials considered; however, the Owner reserves the right to use any generally-accepted system of inspection which, in the opinion of the Engineer, will insure the Owner that the quality of the workmanship is in full accordance with the Contract Documents.

Any waiver of any specific testing or other quality assurance measures, whether or not such waiver is accompanied by a guarantee of substantial performance as a relief from the specified testing or other quality assurance requirements as originally specified, and whether or not such guarantee is accompanied by a performance bond to assure execution of any necessary corrective or remedial Work, shall not be construed as a waiver of any technical or qualitative requirements of the Contract Documents.

Notwithstanding the existence of such waiver, the Engineer shall reserve the right to make independent investigations and tests as specified in this section and, upon failure of any portion of the Work to meet any of the quantitative or qualitative requirements of the Contract Documents, shall be reasonable cause for the Engineer to require the removal or correction and reconstruction of any such Work.

In addition to any other inspection or quality assurance provisions that may be specified, the Owner shall have the right to independently select, test and analyze, at the expense of the Owner, additional test specimens of any or all of the materials to be used. Results of such tests and analyses shall be considered along with the tests and analyses made by the Contractor to determine compliance with the applicable specifications for materials so tested or analyzed; provided that wherever any portion of the Work is discovered, as a result of such independent inspection and investigation, and all costs of removal, correction and reconstruction, or repair of any such Work shall be borne by the Contractor.

#### 1.06 Right of Rejection

The Engineer, acting for the Owner, shall have the right, at all times and places, to reject any articles or materials to be furnished herein which, in any respect, fail to meet the requirements of the Contract Documents, regardless of whether the defects in such articles or materials are detected at the point of manufacture or after completion of the Work at the site. If the Engineer or inspector, through an oversight or otherwise, has accepted materials or Work which is defective or which is contrary to the Contract Documents, such material, no matter in what stage or condition of manufacture, delivery or erection, may be rejected by the Engineer or the Owner.

The Contractor shall promptly remove rejected articles or material from the site of the Work after notification of rejection.

All costs of removal and replacement of rejected articles or materials from the site of the Work after notification of rejection shall be borne by the Contractor.

#### 1.07 Testing Laboratory Services

The Owner will select and pay for the services of an independent testing laboratory to perform specified testing quality control and services, at his discretion.

1. Contractor shall cooperate with the laboratory to facilitate the execution of its required services.

2. Employment of the laboratory shall in no way relieve Contractor's obligations to perform the Work of the Contract.

#### Related Requirements

1. Inspections and testing required by laws, ordinances, rules, regulations, orders or approvals of public authorities as mentioned in the Conditions of the Contract.
2. Certification of Products indicated in respective Specification Sections.

Tests and inspections shall be conducted in accordance with the requirements of these specifications or, if not herein specified, in accordance with the latest standards of ASTM or other recognized authorities.

Testing laboratory inspecting, sampling, and testing are required for (at the Owner's discretion), but not limited to:

1. Structural Steel Welding and Bolting.
2. Metal Fabrications.
3. Paint Work.

#### Qualification of Laboratory

1. Meet "Recommended Requirements of Independent Laboratory Qualification," latest edition, published by American Council of Independent Laboratories.
2. Meet basic requirements of ASTM E 329, "Standard Recommended Practice for inspection and Testing Agencies for Concrete, Steel and Bituminous Materials as Used in Construction" and ASTM C-1077, "Practice for Laboratories Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Laboratory Evaluation".
3. Authorized to operate in the State in which the Project is located.

#### Laboratory Duties

1. Cooperate with Engineer and Contractor; provide qualified personnel after due notice.
2. Perform specified inspections, sampling and testing and reporting of results of materials and methods of construction:
  - a. Comply with specified standards.

- b. Ascertain compliance of materials with requirements of Contract Documents.
  - c. Tests and inspections shall be conducted in accordance with specified requirements and if not specified, in accordance with applicable standards of American Society of Testing and Materials and other recognized authorities as applicable.
3. Promptly notify Engineer and Contractor of observed irregularities or deficiencies of work or products.
4. Promptly submit written reports of each test and inspection; at least one copy of each to Engineer, Owner, and Contractor.
5. Perform any additional tests as required by the Engineer or Owner.

#### Limitations of Authority of Testing Laboratory.

1. Laboratory is not authorized to:
  - a. Release, revoke, alter or enlarge any requirements of Contract Documents.
  - b. Approve or accept any portion of the Work.
  - c. Perform any duties of the Contractor.

#### Contractor's Responsibilities

1. Cooperate with laboratory personnel, provide access to Work and to Manufacturer's operations and make available, without cost, samples of all materials to be tested in accordance with applicable standard specifications.
2. Provide to the laboratory and to the Engineer the preliminary design mix proposed to be used for concrete and other materials and mixes which require control by the testing laboratory.
3. Furnish the testing Laboratory samples of all materials which are intended to be used and which require testing, without cost.
4. Furnish copies of Products test reports as requested.
5. Furnish incidental labor and sheltered working space and other facilities:
  - a. To provide access to Work to be tested.
  - b. To obtain and handle samples at the Project Site or at the source of the product to be tested.



- c. To facilitate inspections and tests.
  - d. For protection, storage and curing of test samples.
6. Costs of tests, samples and mock-ups of substitute and specified material, where the substitution is requested by the Contractor and the tests are necessary in the opinion of the Engineer to establish equality qualified with specified items, shall be borne by the Contractor.
  7. Notify laboratory and Owner's Representative sufficiently in advance of operations to allow for laboratory assignment of inspection personnel, scheduling of tests and completion of initial tests. (48 hours except 24 hours for concrete pours).
  8. Employ and pay for the services of a separate, equally qualified independent testing laboratory to perform additional inspections, sampling and testing required:
    - a. For the Contractor's convenience.
    - b. When initial tests indicate Work does not comply with Contract Documents.
    - c. When required by laws, codes, ordinances, rules, regulations, orders or approvals of public authorities.

## PART 2 – PRODUCTS

NOT USED

## PART 3 – EXECUTION

### 3.01. Testing and Inspection Procedures

Visually inspect all steel connections in field to determine quality, size and compliance with reviewed erection drawings. Where the quality of a weld is in question, the Engineer will be advised. The Contractor may then be required to remove and reweld the connection or if the contractor desires he may have the weld inspected further by radiograph. The cost of this radiography inspection will be borne by the Contractor whether or not the weld is acceptable.

Welded Connections: Welded Connections shall be visually inspected by the testing lab to confirm the size, length, location and quality of all welds conform to Structural Welding Code and the detail drawings. Visual quality inspection shall be per section B.15 of the Structural Welding Code, latest edition published by the American Welding Society (AWS). The testing lab shall check and verify that all welders working at the site or in the shop have a current, valid AWS Certification for the type welding to be performed. Primary member welded connections shall be inspected as described in the preceding paragraph. In addition, the testing lab inspector shall be called as welding starts to check

type of electrode, use of electrode and technique of welders. The testing lab shall return at regular intervals to check welding techniques.

Mill Test Reports: Testing Laboratory shall check mill test reports for compliance with specifications.

Paint Systems: After application of each coating in the specified system and its surface has cured, measure its thickness with a properly calibrated Nordson Microtest Dry Film Thickness Gauge, or equivalent. (Use an instrument such as a Tooke gauge if a destructive tester is deemed necessary). Follow standard method for measurement of dry paint thickness with magnetic gages as outlined in Steel Structures Painting Council's SSPC-PA2-73T. The Engineer shall, at his direction, use the Contractor's or his own equipment to perform similar inspections. In addition, painting personnel shall have, in their possession, a wet film thickness gauge. Each painter shall spot check his work for thickness at intervals not exceeding 15 minutes painting time and shall make any necessary application adjustments.

Make as many determinations as needed to ensure the specified thickness values in each typical area. To all surfaces having less dry film thickness than specified, apply additional coat(s) at no extra cost to Owner to bring thickness up to specifications.

Painting contractor shall permit Owner's representative and/or paint and coating manufacturer (as requested by Owner) to inspect his work for conformance to this specification. Owner reserves the right to reject all work which does not comply with this specification.

END OF SECTION

SECTION 01500 – CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS  
STATE PROJECT No. H.013125 (321)

PART 1 – GENERAL

This section covers all construction facilities, temporary environmental controls, roadways and controls, barriers and site security, traffic regulations, project identification and field offices.

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

3.01 Mobilization

Refer to Section 01505 – Mobilization and Demobilization

3.02 Barriers and Enclosures

**Barricades and Lights**

All streets, roads, highways, and other public thoroughfares which are closed to traffic and/or the public and where work occurs on the public right-of-way shall be protected by effective barricades on which shall be placed acceptable warning signs. Barricades shall be located at the nearest intersecting public highway or street on each side of the blocked section.

**All open trenches, open cuts in the existing dock surface, areas of demolition, and deck infill shall have suitable barricades, signs, flagging and lights to provide adequate protection to the public. Contractor is responsible to provide all necessary safety protection including barriers, lighting, signage and direction at the dock at all times during construction.**

Obstructions such as material piles and equipment shall be provided with similar warning signs and lights.

All barricades and obstructions shall be illuminated with warning lights from sunset to sunrise. Material storage and conduct of the Work on or alongside public streets and highways shall cause the minimum obstruction and inconvenience to the traveling public as possible.

All barricades, lights and other protective devices shall be installed and maintained in conformity with the "Manual on Uniform Traffic Control Devices", latest revision and in the Contractor's Traffic Plan if required by other specifications contained herein.

### 3.03 Security

#### **Protection of Work**

Contractor shall be responsible for protection of the site, and all work, material, equipment, and existing facilities thereon, against vandals and other unauthorized persons.

No claim shall be made against Owner by reason of any act of an employee or trespasser, and Contractor shall make good all damage to Owner's property resulting from his failure to provide security measures as specified.

Security measures shall be at least equal to those usually provided to protect the existing facilities during normal operation, but shall also include such additional security fencing, barricades, lighting, watchmen services, and other measures as required to protect the site.

#### **Protection of Public and Private Property**

Contractor shall protect, shore, brace, support, and maintain all underground pipes, conduits, drains, and other underground construction uncovered or otherwise affected by his construction operations. All pavement, surfacing, driveways, curbs, walks, buildings, utility poles, guy wires, fences, and other surface structures affected by construction operations, together with all sod and shrubs in yards and parking areas, shall be restored to their original conditions, whether within or outside the project limits. All replacements shall be made with new materials.

Contractor shall be responsible for all damage to streets, roads, highways, shoulders, ditches, embankments, culverts, bridges, and other public or private property, regardless of location or character, which may be caused by transporting equipment, materials, or men to or from the Work or any part of site thereof, whether by him or his subcontractors. Contractor shall make satisfactory and acceptable arrangements with the owner of, or the agency or authority having jurisdiction over, the damaged property concerning its repair or replacement or payment of costs incurred in connection with the damage.

All fire hydrants and water control valves shall be kept free from obstruction and available for use at all times. Fire hydrants to be removed and relocated shall be done as quickly as possible.

### 3.03 Maintenance of Traffic

Open pits, trenches, unpaved streets, debris, or other obstructions due to construction that will prevent the normal flow of traffic during an extended construction stoppage, for any reasons, shall be minimized. In the event an extended construction stoppage is found to be necessary, Contractor shall, at his own expense, provide normal traffic flow during extended construction stoppage. Extended stoppage will be defined by the Engineer.

All excavated material shall be placed so that vehicular and pedestrian traffic may be maintained at all times. If the Contractor's operations cause traffic hazards, he shall repair the road surface, provide temporary roadways, erect wheel guards or fences, or take other measures for safety satisfactory to the Engineer.

Detours around construction areas will be subject to the approval of the Owner and the Engineer. Where detours are permitted the Contractor shall provide all necessary barricades and signs as required to divert the flow of traffic. While traffic is detoured, the Contractor shall expedite construction operations. Periods when traffic is being detoured will be strictly controlled by the Owner.

### 3.04 Temporary Environmental Controls

#### **Dust Abatement**

Contractor shall take reasonable measures to prevent unnecessary dust. Earth surfaces subject to dusting shall be kept moist with water or by application of a chemical dust suppressant. Dusty materials in piles or in transit shall be covered to prevent blowing.

The Contractor shall furnish all labor, equipment, and means required and shall carry out effective measures wherever and as often as necessary to prevent its operation from producing dust in amounts damaging to property, cultivated vegetation, or domestic animals, or causing a nuisance to persons living in or occupying buildings in the vicinity. The Contractor shall be responsible for any damage resulting from any dust originating from its operations. The dust abatement measures shall be continued until the Contractor is relieved of further responsibility by the Engineer.

#### **Rubbish Control**

During the progress of the Work, the Contractor shall keep the site of the Work and other areas used by it in a neat and clean condition, and free from any accumulation of rubbish. The Contractor shall dispose of all rubbish and waste materials of any nature occurring at the Work site, and shall establish regular intervals of collection and disposal of such materials and waste. The Contractor shall also keep its haul roads free from dirt, rubbish, and unnecessary obstructions resulting from its operations. Equipment and material storage shall be confined to areas approved by the Engineer. Disposal of all rubbish and surplus materials shall be off the site of construction, at the Contractor's expense, all in accordance with local codes and ordinances governing locations and safety laws, and to the particular requirements of Subpart H, Section 1926.252 of the OSHA Safety and Health Standards for Construction.

#### **Chemicals**

All chemicals used during project construction or furnished for project operation, whether defoliant, soil sterilant, herbicide, pesticide, disinfectant, polymer, reactant or of other

classification, shall show approval of either the U.S. Environmental Protection Agency or the U.S. Department of Agriculture. Use of all such chemicals and disposal of residues shall be in strict accordance with the printed instructions of the manufacturer.

### **Erosion Control**

Contractor shall prevent erosion of soil on the site and adjacent property resulting from his construction activities. Effective measures shall be initiated prior to the commencement of clearing, grading, excavation, or other operations that will disturb the natural protection.

Work shall be scheduled to expose areas subject to erosion for the shortest possible time, and natural vegetation preserved to the greatest extent practicable. Temporary storage and construction buildings shall be located, and construction traffic routed, to minimize erosion. Temporary fast growing vegetation or other suitable ground cover shall be provided as necessary to control runoff.

### **Noise Control**

Contractor shall take reasonable measures to avoid unnecessary noise. Such measures shall be appropriate for the normal ambient sound levels in the area during working hours. All construction machinery and vehicles shall be equipped with practical sound muffling devices, and operated in a manner to cause the least noise consistent with efficient performance of the Work.

During construction activities on or adjacent to occupied buildings, and when appropriate, Contractor shall erect screens or barriers effective in reducing noise in the buildings; and shall conduct his operations to avoid unnecessary noise which might interfere with the activities of building occupants.

The hourly value of the equivalent steady-state noise level shall not exceed 70 decibels.

### **Pollution Control**

Contractor shall prevent the pollution of drains and watercourses by sanitary wastes, sediment, debris, and other substances resulting from construction activities. No sanitary wastes will be permitted to enter any drain or watercourse other than sanitary sewers.

No sediment, debris, or other substance will be permitted to enter sanitary sewers and reasonable measures will be taken to prevent such materials from entering any drain or watercourse.

### **Surface Water Control**

1. Flood Protection

The facilities to be constructed are located in an area which may be subject to heavy rainfall and flooding. During the construction period, Contractor shall provide temporary protection as necessary to prevent flood damage to new and existing facilities and shall be responsible for any damage which may result from flooding due to his negligence.

2. Temporary Drainage Provisions

Contractor shall provide for the drainage of stormwater and such water as may be applied or discharged on the site in performance of the Work. Drainage facilities shall be adequate to prevent damage to the Work, the site, and adjacent property.

END OF SECTION

SECTION 01505 – MOBILIZATION AND DEMOBILIZATION  
STATE PROJECT No. H.013125 (321)

PART 1 – GENERAL

Under this item of work, the Contractor shall set up his necessary general plant including shops, storage areas, temporary facilities and Resident Project Representative's office, Contractor's field offices and such sanitary and other facilities as are required by local or state law or regulation; all as required for the proper performance and completion of the Work. The Contractor shall provide all items of work covered in this section which shall include but not be limited to the following principal items:

1. Moving on to the site of all Contractor's plant and equipment required for first month operations.
2. Installing temporary construction power, wiring, and lighting facilities.
3. Establishing fire protection system.
4. Developing construction water supply.
5. Providing field offices for the Contractor and the Resident Project Representative, complete with all specified furnishings and utility services including telephones. The Contractor has the option of either providing separate offices or may provide separate office space within the same trailer or temporary building.
6. Providing on-site sanitary facilities and potable water facilities as specified.
7. Arranging for and erection of Contractor's work and storage yard.
8. Procurement and submittal of all required contractor and subcontractor insurance certificates and bonds.
9. Obtaining all required permits not already specified to be provided by the Owner including building permit from Saint John the Baptist Parish.
10. Posting all OSHA required notices and other information as required by Federal (EDA), State and Local Agencies. Establishment of safety programs.
11. Have the Contractor's superintendent at the job site full time.



12. Have provided a detailed construction schedule acceptable to the Owner for project use as specified.
  13. Erection of project sign(s) as specified.
  14. Project Schedule - Critical Path Method (CPM) Network.
  15. Misc. Submittals per specifications defined in other sections.
- B. The Contractor may not engage in any field activities (except for surveys) until he satisfactorily submits shop drawings for critical items and has been given authorization by the Owner to proceed with field activities.
- C. The work necessary to demobilize at the end of the project is included as a part of the mobilization of this project.

## PART 2 – PRODUCTS

NOT USED

## PART 3 – EXECUTION

The Contractor may not engage in any field activities (except for surveys, inspections and condition assessment) until he satisfactorily submits shop drawings for critical items, project construction schedule and has been given authorization by the Owner and Engineer to proceed with field activities.

END OF SECTION

SECTION 01510 – TEMPORARY UTILITIES & FACILITIES  
STATE PROJECT No. H.013125 (321)

PART 1 – GENERAL

1.01 Related Work

None

1.02 Temporary Utilities - General

Temporary utilities shall be maintained during the entire period of construction.

Locate temporary utilities, facilities and signs in designated areas to avoid interfering with dock operations. The use of public spaces is not permitted except with specific approval.

Comply with Federal, State and local codes and regulations and with utility company requirements.

Contractor shall provide and maintain all temporary utilities such as water and lighting for the operation of Contractor's plant or equipment or for any other use by Contractor.

1.03 Temporary Electricity

General construction and safety lighting: five foot-candles minimum; and finishing work and testing: 30 foot-candles minimum. A source for temporary electricity shall be secured by the Contractor and the contractor shall supply the temporary lighting as required for the project.

Comply with National Electric Code.

Contractor shall discover characteristics of available sources of electrical power (voltage, phases, amps, etc.) and shall coordinate with his needs as required. Obtain meter so required from utility provider.

1.04 Temporary Water

All water (including extensions of lines, meters and connections) required for and in connection with the Work to be performed and for any specified tests of piping, equipment, devices, etc., or for any other use as may be required for proper completion of the Work shall be provided by and maintained at the expense of the Contractor. No separate payment for water used or required will be made and all costs in connection therewith shall be included in the contract bid price. The Owner will allow use of water from his system provided the Contractor makes all required temporary connections and temporary extension of lines to the work area.

Size piping to supply construction needs.

All drinking water on the site during construction shall be furnished by the Contractor and shall be bottled water.

#### 1.05 Temporary Sanitary Facilities

Contractor shall furnish and maintain neat, clean temporary sanitary facilities (toilet accommodations) at the site, as provided herein, for the needs of all construction workers and other performing work or furnishing services on the Project.

Sanitary facilities shall be clean and sanitary at all times and shall be of reasonable capacity, properly maintained throughout the construction period, and obscured from public view to the greatest practical extent. If toilets of the chemically treated type are used, at least one toilet will be furnished for each 20 men. Contractor shall enforce the use of such sanitary facilities by all personnel at the site.

Provide toilet tissue holders and tissue at all times.

Installation shall be of a type approved by local health department authorities and the State Board of Health.

#### 1.06 Temporary Fire Protection

Provide general temporary fire protection during construction period.

#### 1.07 Temporary Heat and Ventilation

Provide adequate forced ventilation to prevent accumulation of dust, fumes, vapors, or gases and to properly cure materials and disperse humidity.

Provide temporary heat and ventilation as required to maintain adequate environmental conditions to facilitate progress of the work, to meet specified minimum conditions for the installation of materials, and to protect materials and finishes from damage due to temperature or humidity. Portable heaters shall be standard approved units complete with controls. Pay all costs of installation, maintenance, operation and removal, and for fuel consumed.

#### 1.08 Temporary Telephone Service

Contractor shall make all necessary arrangements with the telephone utility or cellular service provider for telephones at the job site for the duration of the project. All telephone numbers shall be in the name of the Contractor, and all charges after installation shall be billed to and paid by the Contractor. Telephone shall have an adequately loud and effective signaling device.

All Contractors and others performing work or furnishing services at the site shall be permitted to use Contractor's telephone without charge for toll-free calls pertaining to the Work. Limit use of telephone to business calls related to the Work. Contractor shall send messengers to call to the telephone the Engineer's or Owner's Representative when they are on or about the project site and receive a call.

List job telephone with information operator in the name of the Project and in the name of the Contractor.

Services for telephone shall not be disconnected until after final inspection of the Project.

#### 1.09 Safety Equipment

Provide personal safety equipment for authorized visitors as well as workmen. Cover trenches and holes when not in use.

#### 1.10 Safety Signs

Install signs as necessary for safety and as necessary to meet insurance requirements. Colors shall meet test specified in Section 3 - Color Definitions, ANSI Z 53.1-1967, "Safety Color Code for Working Physical Hazards".

#### 1.11 Scaffolding and Hoisting

Erect and maintain scaffolds, runways, ramps, and ladders necessary for reaching all portions of work conveniently and safely. Install guard rails as required by OSHA. Install, maintain and operate equipment in a manner that will prevent injury or damage. Meet applicable safety requirements.

### PART 2 – PRODUCTS

NOT USED

## PART 3 – EXECUTION

### 3.01 Removal

Completely remove all temporary utilities and facilities when their use is no longer required. Clean and repair damage caused by temporary installation.

Relocate temporary facilities during construction as required by progress of the Work at no additional cost to the Owner.

END OF SECTION

SECTION 01540 – SECURITY  
STATE PROJECT No. H.013125 (321)

PART 1 – GENERAL

1.01 Related Work

None

1.02 Protection of Work

Contractor shall be responsible for protection of the site, and all work, materials, equipment and existing facilities thereon, against theft, vandals, and other unauthorized persons.

No claim shall be made against Owner, its insurers, or the Engineer by reason of any act of an employee or trespasser, and Contractor shall make good all damage to Owner's property resulting from his failure to provide security measures as specified.

Security measures shall be at least equal to those usually provided to protect the existing facilities during normal operation, but shall also include such additional security fencing, barricades, lighting, watchman services and other measures as required to protect the site.

1.03 Protection of Public and Private Property

Contractor shall avoid damage to existing structures and construction and shall protect, shore, brace, support and maintain all above ground and underground pipes, conduits, drains and infrastructure items uncovered or otherwise affected by his construction operations.

Contractor shall be responsible for all damage to streets, roads, highways, shoulders, ditches, embankments, culverts, bridges and any other public or private property, regardless of location or character, which may be caused by transporting equipment, materials or men to or from the Work or any part of site thereof, whether by him or his Subcontractors. Contractor shall make satisfactory and acceptable arrangements with the owner of, or the agency or authority having jurisdiction over, the damaged property concerning its repair or replacement or payment of costs incurred in connection with the damage.

All fire hydrants, water control valves, and other facilities of public use shall be kept free from obstruction and available for use at all times.

PART 2 – PRODUCTS

All replacements shall be made with new materials to match existing.

PART 3 – EXECUTION  
NOT USED

END OF SECTION

SECTION 01590 – FIELD OFFICES  
STATE PROJECT No. H.013125 (321)

PART 1 – GENERAL

1.01 RESIDENT PROJECT REPRESENTATIVE'S FIELD OFFICE FACILITIES

In addition to the Contractor's field office space or construction trailer, the Contractor shall also immediately provide field office space for the use of the Engineer and/or the Resident Project Representative(s). The Contractor has the option of either providing separate offices or may provide separate office space within the same trailer or temporary building.

1.02 LOCATION OF FIELD OFFICES

It shall be the Contractor's responsibility to provide arrangements required for location of the Resident Project Representative's office space at the project site. The location for the field office must be approved by the Owner and Tenant in writing prior to performance of this work.

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

NOT USED

END OF SECTION



SECTION 01600 – MATERIAL AND EQUIPMENT  
STATE PROJECT No. H.013125 (321)

PART 1 – GENERAL

1.01 Related Requirements

Section 01610 – Transportation and Handling  
Section 01620 – Storage and Protection

1.02 Description

Material and equipment incorporated into the Work or used in the production of the Project shall:

1. Conform to applicable specifications and standards.
2. Comply with size, make, type and quality specified or as specifically approved in writing by the Engineer.

Manufactured and Fabricated Products:

1. Design, fabricate and assemble in accordance with the best engineering and shop practices.
2. Manufacture like parts of duplicate units to standard sizes and gages, to be interchangeable.
3. Two or more items of the same kind shall be identical, by the same manufacturer.
4. Products shall be suitable for service conditions.
5. Equipment Capacities, sizes and dimensions shown or specified shall be adhered to unless variations are specifically approved in writing.

Do not use material or equipment for any purpose other than that for which it is designed or is specified.

Whenever an article, device or piece of equipment specified herein (or as indicated on the Drawings) is referred to in the singular number, such reference shall apply to as many such articles as are indicated on the Drawings or required to complete the installation within the general intent of the Contract Documents.

All materials and products shall be installed in accordance with the requirements of the Contract Documents.

Contractor shall be fully responsible for all materials and equipment which he has furnished, and shall furnish necessary replacements at any time prior to expiration of the correction period.

Off-site storage arrangements shall be acceptable to Owner for all materials and equipment not incorporated into the work but included in Applications for Payment. Such off-site storage arrangements shall be presented in writing, and shall afford adequate and satisfactory security, insurance (provide certificate), and protection. Off-site storage facilities shall be accessible to Engineer.

Existing materials and equipment removed, and not reused or suitable for salvage (in the opinion of the Owner), shall become Contractor's property.

Any items damaged in removal, storage or handling through carelessness or improper procedures shall be replaced by Contractor in kind or with new items.

Existing materials and equipment removed by Contractor shall not be reused in the Work except where so specified or indicated.

All items mentioned in these Contract Documents shall be handled in conformance with this Section, Section 01620, Storage and Protection, instructions in the related Sections, and manufacturer's literature.

### 1.03 Manufacturer's Instructions

When Contract Documents require that installation of Work shall comply with manufacturer's printed instructions, obtain and distribute copies of such instructions to parties involved in the installation, including two copies to Engineer.

1. Maintain one set of complete instructions at the job site during installation and until Project completion.

Handle, install, connect, clean, condition and adjust products in strict accordance with such instructions and in conformity with specified requirements.

1. Should job conditions or specified requirements conflict with manufacturer's instructions, consult with Engineer for further instructions.
2. Do not proceed with such Work without clear instructions.

Perform Work in accordance with manufacturer's instructions. Do not omit any preparatory step or installation procedure unless specifically modified or exempted by Contract Documents.

### 1.04 Protection after Installation

Provide substantial coverings as necessary to protect installed products from damage from traffic and subsequent construction operations. Remove coverings when no longer needed.

#### 1.05 Substrate Conditions

Contractor shall be responsible for verifying and obtaining proper substrate conditions, tolerances and material alignments to receive applied or attached materials and construction.

Substrates shall be sound, clean, dry and free of imperfections or conditions which would be detrimental to receipt of applied materials.

Align materials to give smooth, uniform surface planes within specified tolerances and straight, level and plumb surfaces.

Inspect substrates prior to installation of applied materials. Correct unacceptable conditions prior to proceeding with work.

#### 1.06 Finished Surfaces

Finished surfaces shall be clean, uniform and free of damages, soiling or defects in material and finish.

Finished surfaces shall match color and texture of samples provided or approved by Engineer.

Protection:

1. Protect finished surfaces from damage and soiling during application, drying or curing, as applicable.
2. Provide temporary protective coverings or barriers required.

### PART 2 – PRODUCTS

NOT USED

### PART 3 – EXECUTION

NOT USED

END OF SECTION

SECTION 01610 – TRANSPORTATION AND HANDLING  
STATE PROJECT No. H.013125 (321)

PART 1 – GENERAL

Arrange deliveries of products in accordance with construction schedule, coordinate to avoid conflicts and delays with Work and conditions at the site.

All materials shall be suitably packaged to facilitate handling and protection against impact, abrasion, discoloration, and other damage. All painted or galvanized surfaces, which are damaged prior to acceptance of equipment, shall be repainted to the satisfaction of Engineer.

Each item, package, or bundle of material shall be tagged or marked as identified in the delivery schedule or on the Shop Drawings. Complete packing lists and bills of material shall be included with each shipment.

Deliver products in undamaged condition, in manufacturer's original containers or packaging with identifying labels intact and legible. Labels shall indicate manufacturer and product name, description, mixing and application instructions, limitations, cautions and warnings.

Immediately upon delivery, inspect shipments to ensure proper material, color, type, quantities, and to assure compliance with the Contract Documents and approved submittals and that the products are undamaged.

Provide equipment and personnel to handle products by methods to prevent soiling or damage to the product or packaging.

The Contractor is responsible for transporting all Owner-furnished items from their stored locations to the appropriate jobsite.

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

NOT USED

END OF SECTION

SECTION 01620 – STORAGE AND PROTECTION  
STATE PROJECT No. H.013125 (321)

PART 1 – GENERAL

1.01 Related Requirements

DIVISION 00

1.02 Description

All materials shall be suitably packaged (in manufacturer's original packaging with labels and seals intact) to facilitate handling and protect against damage during storage. Painted and prefinished surfaces shall be protected against impact, abrasion, discoloration, and other damage. All painted or prefinished surfaces which are damaged prior to acceptance of equipment shall be repainted to the satisfaction of the Engineer.

Each item, package, or bundle of material shall be tagged or marked as identified in the delivery schedule or on the Shop Drawings. Complete packing lists and bills of material shall accompany each shipment.

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

3.01 Storage, General

Store products, immediately on delivery, in accordance with manufacturer's instructions, with seals and labels intact and legible. Protect until installed. Materials shall be stored so as to insure the preservation of their quality and fitness for the Work.

Arrange storage in a manner to provide access for maintenance of stored items and for inspection.

Store and handle products subject to spillage in areas where spills will not deface surfaces.

Store products subject to damage by the elements in weathertight enclosures.

Maintain temperature and humidity within the ranges required by manufacturer.

Flammable or hazardous materials:

1. Store minimum quantities in protected areas.

2. Provide appropriate type fire extinguishers near storage areas.
3. Observe manufacturer's precautions and applicable ordinances and regulations.

### 3.02 Exterior Storage

Provide substantial platforms, blocking, or skids, to support fabricated products above ground; slope to provide drainage. Protect products from soiling and staining.

For products subject to discoloration or deterioration from exposure to the elements, cover with impervious sheet material. Provide ventilation to avoid condensation.

Store loose granular materials on clean, solid surfaces such as pavement, or on rigid sheet materials, to prevent mixing with foreign matter.

Provide surface drainage to prevent erosion, pollution by mixing and ponding of water.

Prevent mixing of refuse or chemically injurious materials or liquids.

### 3.04 Maintenance of Storage

Periodically inspect stored products on a scheduled basis.

Verify that storage facilities comply with manufacturer's product storage requirements.

Verify that manufacturer's required environmental conditions are maintained continually.

Verify that surfaces of products exposed to the elements are not adversely affected; that any weathering of finishes is acceptable under requirements of Contract Documents.

### 3.05 Protection after Installation

Provide substantial coverings as necessary to protect installed products from damage from traffic and subsequent construction operations. Remove coverings when no longer needed.

END OF SECTION

SECTION 01630 – PRODUCT OPTIONS AND SUBSTITUTIONS  
STATE PROJECT No. H.013125 (321)

PART 1 – GENERAL

1.01 Related Requirements

Section 01300 – Submittals.

1.02 Description

In accordance with Louisiana Public Contract Statute (LSA R.S. - 38:2295), these Contract Documents include provisions for use of equivalent materials and equipment. Requests for review of equivalency shall be submitted in accordance with Section 00100, Instructions to Bidders and as herein specified.

Bids shall be based only on materials, system or equipment specified in the Contract Documents or which have been approved by Addendum during the bidding period. All equipment and materials specified or indicated on drawings by manufacturer's name, catalog or model number has been selected to establish a standard of quality and function. Products of other manufacturer may be submitted to the Engineer for consideration. Substitution submittals must be in accordance with the requirements of prior approval specified in the Project Manual.

1.03 Samples

Samples shall be of sufficient size and quantity to clearly illustrate:

1. Functional characteristics of the product with integrally related parts and attachment devices.
2. Full range of color, texture, and pattern.
3. Serve as a sample for testing.
4. Establish standards by which completed work is judged.

Label each sample with identification required for transmittal letter.

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

### 3.01 Procedure

Submit a separate request for each product, supported with complete data, drawings and samples as appropriate including comparison of the qualities of the proposed substitution with that specified, changes required in other elements of the Work because of the substitution, effect on construction schedule, cost data comparing the proposed substitution with the specified products, comparison of availability of maintenance, service and replacement cost, source of replacement materials, and any required license fees or royalties.

1. Any supporting test data or results shall use the same test procedures for the proposed substitution and the specified products to facilitate comparison.

Request for substitution constitutes a representation that the Contractor:

1. Has personally investigated the proposed substitute product and determined that it is equal to or superior in all respects to that specified.
2. Will provide the same or better warranties, bonds and guarantees for the substitution as for the specified product.
3. Will coordinate the installation of an accepted substitution into the Work and make the Work complete in all respects.
4. Waives all claims for additional costs, related to the substitution which may subsequently become apparent.

The Engineer shall be the judge of the acceptability of proposed substitutions.

Engineer will review requests for substitutions with reasonable promptness, and notify Contractor, in writing, of the decision to accept or reject the requested substitution.

All requests for substitutions shall be submitted in writing no less than ten (10) calendar days prior to the date of the bid opening.

The above shall not be construed to mean that substitution of materials and equipment will be allowed routinely. The Owner reserves the right to disapprove and reject any request for substitution.

END OF SECTION



SECTION 01700 – CONTRACT CLOSEOUT  
STATE PROJECT No. H.013125 (321)

PART 1 – GENERAL

1.01 Requirements Included

Comply with requirements stated in the General and Supplementary Conditions of the Contract and in the Specifications for administrative procedures in closing out the Work.

Comply with safety standards and governing regulations for cleaning operations. Do not burn waste materials at the site, or bury debris or excess materials on the Owner's property or discharge volatile or other harmful or dangerous material into drainage systems; remove waste materials from the site and dispose of in a lawful manner.

1.02 Related Work

General and Supplementary Conditions of the Contract. Fiscal provisions, legal submittals and additional administrative requirements.

Section 01010: Summary of Work.

Section 01152: Applications for Payment.

1.03 Cleaning

Use cleaning products which will not damage adjacent surfaces.

Remove all temporary labels.

Clean project site, of litter and foreign substances. Sweep paving to a broom clean condition; remove stains, spills and other foreign deposits.

Clean exposed hard-surfaced finishes, including metals, painted surfaces, plastics, special coatings, and similar surfaces to a dirt-free condition, free of dust, stains, films and similar noticeable distracting substances caused by work of this contract.

Remove all waste and surplus material from site, (that is, completely off of site).

1.04 Substantial Completion

In no case shall the Contractor claim completion or request Engineer's inspection to determine same until all required inspections by various governmental regulatory agencies have been made and certificates determining compliance have been delivered to the Engineer. When Contractor considers the Work is substantially complete, he shall submit to the Engineer (original and 2 copies each):

1. A written notice that the Work or designated portion thereof, is substantially complete.
2. A list of items (PUNCH LIST) to be completed or corrected.
3. Prepare and file a request for Certificate of Use and Occupancy with the Building Department.
4. All documents, manuals, guarantees and related items as called for in the technical sections of the Project Manual. It is incumbent on the Contractor to review the Project Manual and provide all guarantees, manual, etc. Items required to be submitted include, but is not necessarily limited to the following items:
  - a. Contractor's one (1) year written guarantee.
  - b. Maintenance manuals and warranties from the manufacturer to the Owner on individual materials, systems, or equipment (as required by the individual Technical Sections) include emergency instruction, warranties, guarantees, recommended preventive maintenance procedures and cycles, inspection procedures, product data, and similar applicable information.

Within a reasonable time after receipt of notice of substantial completion, the Engineer will make an inspection to determine the status of completion.

Should the Engineer determine that the Work is not substantially complete:

1. Engineer will promptly notify the Contractor in writing, giving the reasons therefor and review with the Contractor items which remain incomplete.
2. Contractor shall remedy the deficiencies in the Work, and send a second written notice of substantial completion to the Engineer.
3. Engineer will re-inspect the Work.

When the Engineer finds that the Work is substantially complete, he may:

1. Prepare and deliver to the Owner a notification of Substantial Completion on an appropriate form with the Contractor's list of items to be completed or corrected as verified and amended by the Engineer before final payment.
2. After consideration of any objections made by the Owner as provided in Conditions of the Contract, and when Engineer considers that the Work is substantially complete, he will countersign and deliver to the Owner and the contractor a definite notification of Substantial Completion with a revised list of items to be completed or corrected.

#### 1.05 Final Inspection

When Contractor considers the Work is complete, he shall submit written notification on his letterhead that (3 copies each):

1. Contract Documents have been reviewed.
2. Work has been inspected for compliance with Contract Documents.
3. Work has been completed in accordance with Contract Documents.
4. Equipment and systems have been tested in the presence of an Owner's representative and are operational/functional.
5. Work is completed and ready for final inspection.
6. All items noted from the Substantial Completion inspection have been completed or corrected.

Contractor shall also submit (3 copies each):

1. Certificate of Use and Occupancy.
2. Certificate of approved final inspection for all applicable mechanical, electrical, plumbing equipment, etc. as required by state and local authorities.

Engineer will make an inspection to verify the status of completion with reasonable promptness after receipt of such notification.

Should Engineer consider that the Work is incomplete or defective:

1. Engineer will promptly notify the Contractor in writing, listing the incomplete or defective work.
2. Contractor shall take immediate steps to remedy the stated deficiencies and send a second written notification to Engineer stating that the Work is complete.
3. Engineer will reinspect the Work.

When the Engineer finds that the Work is acceptable under the Contract Documents, he shall request the Contractor to make closeout submittals, including Application for Final Payment and shall recommend to Owner in writing to accept the Project.

#### 1.06 Re-inspection Fees

Should Engineer perform re-inspection due to failure of the Work to comply with the claims of status of completion made by the Contractor:

1. Owner will compensate Engineer for such additional services.

2. Owner will deduct the amount of such compensation from the final payment to the Contractor.

#### 1.07 Contractor's Closeout Submittals to Engineer

Unless previously submitted, submit the following:

1. Warranties, Guarantees and Bonds. All warranty periods shall begin on the date of Acceptance of Substantial Completion. Provide warranties for all work and for all operating equipment as called for in various Sections of the Project Manual.
2. Operation and Maintenance Manuals and data, Owner's Manuals (3 copies each).
3. Evidence of Payment and Release of Liens: In accordance with requirements of General and Supplementary Conditions.
4. As-built survey of conditions including deck surface and existing waterside and new landside crane rail noting installation within allowable tolerances as specified in the Contract Documents.

#### 1.08 Final Adjustment of Accounts

Submit a final statement of accounting to the Engineer.

Statement shall reflect all adjustments to the Contract Sum:

1. The original Contract Sum.
2. Additions and deductions resulting from:
  - a. Previous Change Orders.
  - b. Deductions for liquidated damages.
  - c. Deductions for reinspection payments.
  - d. Deductions for overtime inspection payments.
  - e. Other adjustments.
3. Total Contract Sum, as adjusted.
  4. Previous payments.
  5. Sum remaining due.

Engineer will prepare a final Change Order, reflecting approved adjustments to the Contract Sum which were not previously made by Change Orders, if any.

1.09 Final Application For Payment

Contractor shall submit the final Application for Payment in accordance with procedures and requirements stated in the General and Supplementary Conditions of the Contract and Section 01152, Applications for Payment.

1.10 Liquidated Damages

The amount of liquidated damages will be as stipulated in Section 00850, Additional Special Provisions, paragraph SP-3.

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

Closeout Procedures

Except as otherwise indicated or requested by the Engineer, remove temporary protection devices and facilities which were installed during the course of the work to protect previously completed work during the remainder of the construction period.

END OF SECTION

SECTION 01720 – PROJECT RECORD DOCUMENTS  
STATE PROJECT No. H.013125 (321)

PART 1 – GENERAL

1.01 Description

The Contractor shall maintain at the site for the Owner's permanent records one copy of each of the following:

1. Drawings.
2. Specifications.
3. Addenda.
4. Change Orders and other Modifications to the Contract.
5. Engineer Field Orders or Written Instructions.
6. Approved Shop Drawings, Product Data.
7. Field Test Records.
8. Construction Photographs.
9. Field survey, verification of existing conditions, inspections and condition assessment report.

1.02 Related Work Specified Elsewhere

Submittals

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

3.01 Maintenance of Documents and Samples

The Contractor shall store documents and samples in Contractor's field office apart from documents used for construction.

The Contractor shall provide files and racks for storage of documents.

The Contractor shall maintain documents in a clean, dry, legible condition and in good order. Do not use record documents for construction purposes.

The Contractor shall make documents and samples available at all times for inspection by the Engineer and Owner.

### 3.02 Marking-Up Record Drawings

The Contractor shall mark with red erasable pencil and, where necessary, use other pencil colors, as required to record as-built condition.

### 3.03 Recording

Label each document (including record prints and shop drawings) "PROJECT RECORD" in neat large printed letters.

Record information concurrently with construction progress. Do not conceal any work until required information is recorded.

#### Drawings

Legibly mark field drawings to record actual construction:

1. Location of internal utilities and appurtenances concealed in the construction, referenced to visible and accessible features of the structure.
2. Field changes of dimensions and details.
3. Changes made by Field Order by Change Order.
4. Details not on original Contract Drawings.

#### Specifications and Addenda

The Contractor shall legibly mark each Section to record:

1. Manufacturer, trade name, catalog number and supplier of each product and item of equipment actually installed.
2. Changes made by Field Order or by Change Order.

### 3.04 Submittals

At Contract close-out deliver Record Documents to the Engineer including marked-up Drawings, As-Built Survey, Specifications, Addenda, Change Orders and other modifications to Contract; Engineers Field Orders and Written Instructions, Approved Shop Drawings, Product Data, Field Test Records and any other documents which serve as a record of actual field installation and construction different from the original Contract Documents. Engineer will submit them to Owner.

Accompany submittals with transmittal letters in duplicate, containing:

1. Date
2. Project title and number
3. Contractor's name and address
4. Title and number of each Record Document
5. Signature of Contractor or his authorized representative.

END OF SECTION



SECTION 01740 – WARRANTIES AND BONDS  
STATE PROJECT No. H.013125 (321)

PART 1 – GENERAL

Contractor shall maintain and keep in good repair the improvements covered by these Drawings and Specifications during the life of the Contract.

Contractor shall indemnify the Owner against any repairs which may become necessary to any part of the work performed and to items of equipment and systems procured for or furnished under this Contract, arising from defective workmanship or materials used therein, for a period of one (1) year from the date of final acceptance of the Work by the Owner.

The Contractor shall, at his own expense, furnish all labor, materials, tools and equipment required and shall make such repairs and removals or shall perform such work or reconstruction as may be made necessary by structural or functional defect or failure resulting from neglect, faulty workmanship or faulty materials, in any part of the Work performed by him.

Except as noted on the Drawings or as specified, return structures such as embankments and fences to their original condition prior to the completion of the Contract. Repair damage to facilities not designated for removal, resulting from the Contractor's operations, at no cost to the Owner.

The Contractor shall be responsible for all road, entrance and driveway reconstruction and repairs and maintenance of same for a period of one (1) year from the date of such reconstruction. In the event the repairs and maintenance are not made immediately and it becomes necessary for the Owner of the road to make such repairs, the Contractor shall reimburse the Owner of the road for the cost of such repairs.

In the event the Contractor fails to proceed to remedy the defects of which he has been notified within fifteen (15) days of the date of such notice, the Owner reserves the right to cause the required materials to be procured and the work to be done, as described in the Drawings and Specifications, and to hold the Contractor and the sureties on his bond liable for the cost and expense thereof.

All warranties, bonds, insurance, etc. shall provide for thirty (30) day advance notice to the Owner prior to cancellation or renewal date. No payment will be made to the Contractor for any work without insurance and bonds being in effect.

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

NOT USED

END OF SECTION

SECTION 01750 – CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT  
STATE PROJECT No. H.013125 (321)

PART 1 – GENERAL

1.01 Government Policy

Government policy is to apply sound environmental principles in the design, construction and use of facilities. As part of the implementation of that policy the Contractor shall: (1) practice efficient waste management when sizing, cutting, and installing products and materials and (2) use all reasonable means to divert construction and demolition waste from landfills and incinerators and to facilitate their recycling or reuse.

1.02 Management

The Contractor shall take a pro-active, responsible role in the management of construction and demolition waste and require all Sub-Contractors, vendors, and suppliers to participate in the effort. Construction and demolition waste includes products of demolition or removal, excess or unusable construction materials, packaging materials for construction products, and other materials generated during the construction process but not incorporated into the work. In the management of waste consideration shall be given to the availability of viable markets, the condition of the material, the ability to provide the material in suitable condition and in a quantity acceptable to available markets, and time constraints imposed by internal project completion mandates. The Contractor shall be responsible for implementation of any special programs involving rebates or similar incentives related to recycling of waste. Revenues or other savings obtained for salvage, or recycling shall accrue to the Contractor. Firms and facilities used for recycling, reuse, and disposal shall be appropriately permitted for the intended use to the extent required by federal, state, and local regulations.

1.03 Plan

A waste management plan shall be submitted within 15 days after notice to proceed and prior to initiating any site preparation work. The plan shall include the following:

1. Name of individuals on the Contractor's staff responsible for waste prevention and management.
2. Actions that will be taken to reduce solid waste generation.
3. Description of the specific approaches to be used in recycling/reuse of the various materials generated, including the areas and equipment to be used for processing, sorting, and temporary storage of wastes.
4. Characterization, including estimated types and quantities, of the waste to be generated.

5. Name of landfill and/or incinerator to be used and the estimated costs for use, assuming that there would be no salvage or recycling on the project.
6. Identification of local and regional reuse programs, including non-profit organizations such as schools, local housing agencies, and organizations that accept used materials such as materials exchange networks and Habitat for Humanity.
7. List of specific waste materials that will be salvaged for resale, salvaged and reused, or recycled. Recycling facilities that will be used shall be identified.
8. Identification of materials that cannot be recycled/reused with an explanation or justification.
9. Anticipated net cost savings determined by subtracting Contractor program management costs and the cost of disposal from the revenue generated by sale of the materials and the incineration and/or landfill cost avoidance.

#### 1.04 Records

Records shall be maintained to document the quantity of waste generated; the quantity of waste diverted through sale, reuse, or recycling; and the quantity of waste disposed by landfill or incineration. The records shall be made available to the Contracting Officer during construction, and a copy of the records shall be delivered to the Contracting Officer upon completion of the construction.

#### 1.05 Collection

The necessary containers, bins and storage areas to facilitate effective waste management shall be provided and shall be clearly and appropriately identified. Recyclable materials shall be handled to prevent contamination of materials from incompatible products and materials and separated by one of the following methods:

1. Source Separated Method.
  - a. Waste products and materials that are recyclable shall be separated from trash and sorted into appropriately marked separate containers and then transported to the respective recycling facility for further processing.
2. Co-Mingled Method.
  - a. Waste products and recyclable materials shall be placed into a single container and then transported to a recycling facility where the recyclable materials are sorted and processed.

#### 1.06 Disposal

Except as otherwise specified in other sections of the specifications, disposal shall be in accordance with the following:

1. Reuse:

- a. First consideration shall be given to salvage for reuse since little or no re-processing is necessary for this method, and less pollution is created when items are reused in their original form. Sale or donation of waste suitable for reuse shall be considered. Salvaged materials, other than those specified in other sections to be salvaged and reinstalled, shall not be used in this project.
2. Recycle:
    - a. Waste materials not suitable for reuse, but having value as being recyclable, shall be made available for recycling whenever economically feasible.
3. Waste:
    - a. Materials with no practical use or economic benefit shall be disposed at a landfill or incinerator.

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

NOT USED

END OF SECTION

## **SECTION 01 10 00 - SCOPE OF WORK**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Project Drawings and general provisions of the Contract Documents, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### **1.2 SUMMARY**

- A. The Work of Project is defined by the Contract Documents and consists of the following work items. This work includes all that is necessary to provide the Owner with a complete project and thereby includes the procurement, fabrication, transportation, and installation necessary to complete the work unless such items are specifically indicated as Owner-furnished.
- B. Section Includes:
  - 1. Project Information
  - 2. Scope of Work – Structural
  - 3. Scope of Work - Electrical
  - 4. Owner-Furnished Products
  - 5. Contractor-Furnished Products
  - 6. Conditions on Site
  - 7. Surveying and Layout
  - 8. Weather
  - 9. Access to Site
  - 10. Coordination with Owner
  - 11. Work Restrictions
  - 12. Project Drawings and Specifications
  - 13. Construction Reports
  - 14. Billing

### 1.3 PROJECT INFORMATION

- A. Project Name: Reserve Grain Facility - Under Dock Refurbishment – Phase 1A
  - 1. Project Location: Reserve, LA
- B. Owner: Port of South Louisiana
  - 1. Owner's Representative: Mr. Paul Matthews, Executive Director
- C. Engineer: Lanier & Associates Consulting Engineers, Inc.
  - 1. Engineer's Representative: Allison Gaines, P.E.

### 1.4 SCOPE OF WORK - STRUCTURAL

- A. Mobilization and Demobilization
  - 1. Contractor shall be responsible for the mobilization and demobilization of all equipment, manpower, and all other items necessary to complete the work outlined in the attached documents.
- B. Surveying
  - 1. Contractor shall be responsible for all required surveying and layout work necessary for the installation of the new approachway piles and framing in accordance with the Project Drawings and as delineated in the Technical Specifications.
- C. Demolition
  - 1. Contractor shall be responsible for all demolition as shown in the Project Drawings and in accordance with the demolition specifications.
- D. Degrading
  - 1. Contractor shall be responsible for removal and disposal of material as shown on the Project Drawings and in accordance with the project specifications. This includes immediately hauling material offsite.
- E. New Approachway
  - 1. Contractor shall be responsible for fabrication and installation of new approachway piles, steel jackets, concrete panels and all other associated steel framing in accordance with the Project Drawings. Includes new stair access from new approachway to existing platform.
- F. New Elevated Guard Shack Framing
  - 1. Contractor shall be responsible for fabrication and installation of elevated steel platform for new guard shack in accordance with the Project Drawings.

G. Installation of New Guard Shack

1. Contractor shall be responsible for the installation of a new Owner-furnished steel Guard Shack in accordance with the Project Drawings.

I. Coordination with scaffolding contractor for temporary dock access

1. Contractor shall coordinate with Scaffolding Contractor and provide opening in gallery grating for temporary access tie-in.

1.5 SCOPE OF WORK – ELECTRICAL

A. The electrical work shall be performed in accordance with all local codes, the latest editions of the National Electrical Code (NEC) and the National Electrical Safety Code (NESC), the technical specifications and drawings.

B. Throughout the phases of this project, Contractor shall maintain circuit continuity and functionality for electrical equipment/devices that are to remain in operation.

C. Demo Work by the Contractor:

1. The Guard Shack building shall be removed by the Contractor. The Contractor shall disconnect and remove the Guard Shack transformer including the associated conduit and wiring as indicated on the project drawings and notes.
2. Contractor shall splice the Guard Shack Transformer feeder cable fed from the “Westinghouse Switchboard” (Dock Electrical Room “MCC-10C”) at a new handrail mounted junction box “JB-1” that shall be located inside the Cover Handling Building as indicated on the project drawings and notes.
3. Contractor shall disconnect and remove the 50KVA, 480/208V transformer and associated disconnect switch, conduit and wiring located on the downstream dock inbound access road as indicated on the project drawings and notes.
4. Contractor shall temporarily disconnect the CCTV Camera cable located on a platform at the northwest corner of the Cover Handling Building. This cable is currently installed in a flexible conduit routed along the downstream side of the approachway that will be demolished. Contractor shall document the cable terminations at both ends prior to disconnection of the cable and commencing the demolition work. This cable shall be replaced with a new cable of the same size/type as the existing cable and shall be re-terminated inside the relocated Data/CCTV/Communication Box during the installation phase of this project.
5. Contractor shall disconnect and remove the conduits and wiring routed along the downstream and upstream sides of the approachway that will be demolished. Contractor shall trace back to the source all the cables and document cable terminations at both ends prior to disconnection of any cable and commencing the demolition work. Contractor shall notify Engineer of any conflict.



6. Contractor shall disconnect the CCTV camera located at the exterior east wall of the Guard Shack, including all the associated accessories, conduit and wiring as indicated on the project drawings and notes. CCTV camera shall be returned to Owner.
7. Contractor shall disconnect and remove the dock access Security Gate and all the associated equipment/devices and wiring. The actual Security Gate Card Reader shall be temporarily relocated as indicated on paragraph D. item 3 of this scope of work. Contractor shall document cable terminations at both ends prior to disconnecting any cable and commencing the demolition work.
8. Contractor shall coordinate with Owner's representative prior to commencing the demolition work.

D. Relocation of Equipment/Devices by the Contractor:

1. Contractor shall relocate the Data/CCTV/Communication Box mounted on the Guard Shack exterior north wall to the New Guard Shack Platform as indicated on the project drawings and notes. Contractor shall procure and install the associated supports, hardware, accessories, conduit, wiring, etc. Extend conduits and wiring as required. Conduit shall be routed as per field conditions. Several equipment/devices shall remain in operation during the different phases of this project. Contractor shall coordinate with Owner's representative prior to commencing the work.
2. Contractor shall relocate the Camera/Intercom system located next to the Security Gate that will be demolished to the temporary Dock Access Gate as indicated on the project drawings and notes. Extend the associated conduit and wiring as required. Conduit shall be routed as per field conditions. Contractor shall coordinate with Owner's representative prior to commencing the work.
3. Contractor shall relocate the Security Gate Card Reader located at the downstream dock inbound access road to the temporary Dock Access Gate as indicated on the project drawings and notes. Extend the associated conduit and wiring as required. Conduit shall be routed as per field conditions. Contractor shall coordinate with Owner's representative prior to commencing the work.

E. Equipment furnished by Owner and installed by the Contractor:

1. New Guard Shack Building:
  - a. New Guard Shack Building will be installed by the Contractor. The Contractor shall procure and install all the associated electrical equipment/devices, accessories, etc. including conduit and wiring as indicated on the project drawings and notes.
2. New Security Gate System:
  - a. New Security Gate System shall be furnished by Owner. Contractor shall install the new Security Gate System and all the associated accessories/devices. Contractor shall procure and install all the associated conduit and wiring as indicated on the project drawings and notes.

- F. Equipment furnished and installed by the Contractor:
1. Procurement and installation of a temporary Dock Access Gate feeder cable including the associated conduit, supports, etc. as indicated on drawings and the construction documents. Conduit shall be routed as per field conditions. This feeder cable including the associated conduit, etc. shall be removed after the new Security Gate has been installed. Contractor shall coordinate with Owner’s representative prior to commencing the work.
  2. Procurement and installation of the Guard Shack and Security Gate CCTV Cameras including the associated accessories, wiring and wiring termination as indicated on the project drawings and notes.
  3. Procurement and installation of handrail mounted lights, supports, conduit, wiring, etc. along the new and existing approachway guardrail as indicated on drawings and the construction documents.
  4. Procurement and installation of a Guard Shack Transformer and associated Fused Disconnect Switch, including hardware, conduit, wiring, etc. as indicated on drawings and the construction documents.
  5. Procurement and installation of Junction Box “JB-1”, including the associated supports, accessories conduit and wiring as indicated on the project drawings and notes.
  6. The Contractor shall be responsible for furnishing all materials necessary to complete the work included in this bid package.
  7. Some sections of the existing cables shall be re-used if they are in good condition, passes the insulation test (Megger) and cable length is adequate. Contractor shall contact Engineer if cables cannot be reused.
  8. Contractor shall replace any damaged cable being re-used with a new cable of the same size, type and manufacturer unless otherwise approved by the Engineer.
- G. To minimize downtime, the contractor shall submit a work plan outlining the tasks that will be performed prior to commencing the work.
- H. Mobilization and Demobilization:
1. Mobilization and demobilization of all equipment, manpower, and all other items necessary to complete the work outlined in the attached documents.
- I. Testing and Configuration:
1. Testing and inspection of all wiring, grounding, electrical devices/equipment, etc. associated to this project.
  2. Provide all other testing requirements as shown in the electrical specifications.

#### 1.6 OWNER-FURNISHED PRODUCTS

- A. Owner will furnish products indicated. The Work includes receiving, unloading, handling, and installing Owner-furnished products.
- B. Owner-Furnished Products:
  - 1. New Guard Shack Building
  - 2. New Security Gate System

#### 1.7 CONTRACTOR-FURNISHED PRODUCTS

- A. Contractor shall be responsible for furnishing all materials necessary to complete the Work Covered by Contract Documents that are not specifically identified as Owner-Furnished Products. The Work includes unloading, handling, storing, and protecting Contractor-furnished products as directed and turning them over to Owner at Project closeout.

#### 1.8 CONDITIONS ON SITE

- A. Contractors are to familiarize themselves with the location and conditions under which the work will be performed or any conditions that will affect the work. No additional allowance will be granted due to lack of knowledge of such conditions.
- B. The Contractor is to field verify dimensions and identify any interference. Any additional costs resulting from an undetected interference will be the Contractor's responsibility.
- C. During the actual construction period, the Contractor will make every effort to maintain the work site in a clean and safe condition. At the completions of all construction activity, the Contractor shall restore all work areas to, at least, the condition that existed prior to any construction activity. Final cleanup and site restoration will be subject to inspection and acceptance by the Owner.
- D. Space will be provided on site for lay down of materials as indicated in the bid walk.

#### 1.9 SURVEYING AND LAYOUT

- A. Surveying and layout work for this project will be the responsibility of the Contractor.

#### 1.10 WEATHER

- A. Owner shall not be held accountable for problems or delays which are incurred as a direct result of adverse weather conditions or other acts of God. Downtime due to adverse weather should be estimated and included in the Contractor's schedule and the base bid.

#### 1.11 ACCESS TO SITE

- A. General: Contractor shall have full use of Project site for construction operations during construction period. Contractor's use of Project site is limited only by Owner's right to perform work or to retain other Contractors on portions of Project.

- B. Contractor shall not drive equipment, stake materials, deposit soil or excavated materials (even temporarily), or discharge sediment laden water on any areas beyond the demarcated limits of construction.

#### 1.12 COORDINATION WITH OWNER

- A. Owner will continue to operate the facility during the entire construction period. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Contractor shall perform the Work so as not to interfere with Owner's day-to-day operations.
  - 1. Maintain existing exits unless otherwise indicated.
  - 2. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from Owner and approval of authorities having jurisdiction.
  - 3. Notify Owner not less than 72 hours in advance of activities that will affect Owner's operations.

#### 1.13 WORK RESTRICTIONS

- A. Work Restrictions, General: Contractor shall comply with restrictions on construction operations.
  - 1. Comply with limitations on use of public streets and with other requirements of authorities having jurisdiction.
- B. Existing Utility Interruptions: Contractor shall not interrupt utilities serving facilities unless permitted under the following conditions and then only after providing temporary utility services according to requirements indicated:
  - 1. Notify Owner not less than two days in advance of proposed utility interruptions.
  - 2. Obtain Owner's written permission before proceeding with utility interruptions.
- C. Nonsmoking Site: Smoking is not permitted on Project site.
- D. Controlled Substances: Use of tobacco products and other controlled substances on Project site is not permitted.
- E. Employee Identification: Owner may choose to provide identification tags for Contractor personnel working on Project site.
  - 1. Contractor shall require personnel to use identification tags at all times.
- F. Employee Screening: Comply with Owner's requirements for drug and background screening of Contractor personnel working on Project site.
  - 1. Contractor shall maintain list of approved screened personnel with Owner's representative.

- G. TWIC: All Contractor personnel shall have a Transportation Worker Identification Credential (TWIC) in order to perform work at the Project site

#### 1.14 PROJECT DRAWINGS AND SPECIFICATIONS

- A. Only Project Drawings which are stamped “For Construction” and sealed by the Engineer may be used for construction including layout, fabrication, shop drawings, etc.
- B. Contractor shall be responsible to ensure his field crew receives the most current set of Project Drawings, revisions, and addenda.
- C. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
  - 1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
  - 2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.
- D. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.
- E. The specifications referenced above and included in these documents have been provided by the Owner’s Engineer. Where there is similarity between the specifications listed above and those provided by the Owner, the strictest governance shall apply.
- F. Drawing Coordination: Requirements for materials and products identified on Project Drawings are described in detail in the Specifications. One or more of the following are used on Project Drawings to identify materials and products:
  - 1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.

#### 1.15 CONSTRUCTION REPORTS

- 1. The Contractor will be responsible for submitting daily construction reports to the Owner. The reports shall give a brief description of progress made during the day as well as problems which have arisen which may have caused delays in the project schedule. Failure to submit these reports may cause a delay in processing of invoices and subsequent delay in payment. In addition to the daily report a weekly update report shall be issued, which reflects safety, manpower, percent complete, areas of concern, and other pertinent information as determined by the Owner.

#### 1.16 BILLING

- 1. Billing will be as indicated in the Contractor’s contract with the Owner.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

**END OF SECTION 01 10 00**



## **SECTION 01 25 00 – SUBSTITUTION PROCEDURES**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### **1.2 SUMMARY**

- A. Section includes administrative and procedural requirements for replacing materials and equipment listed in the following Specifications.
- B. Related Requirements:
  - 1. Section 01 10 00, “Scope of Work” for project description and list of materials and equipment.

#### **1.3 PRODUCT LIST**

- A. Within 21 days after date of contract, submit to the Engineer copies of a complete list of all products which are proposed for installation.
- B. Tabulate list by each specification section.
- C. For products specified under reference standards, include with listing of each product:
  - 1. Name and address of manufacturer.
  - 2. Trade name.
  - 3. Model or catalog designation.
  - 4. Manufacturer’s data.
    - a. Performance and test data.
    - b. Reference standards.

#### **1.4 CONTRACTOR’S OPTIONS**

- A. Special brands of material or devices mentioned in Specifications, or on Drawings are for the purpose of establishing a standard or criterion of quality and character desired.
- B. For products specified by naming several products or manufacturers, select any product and manufacturer named.

- C. For products specified by naming one or more products, but indicating the option of selecting equivalent products by stating “or equal” after specified product, Contractor must submit request to the Engineer for substitution for any product not specifically named.
- D. For products specified by naming one or more products, but indicating the option of selecting equivalent products by stating “or approved equal” after specified product, Contractor must submit information to the Engineer for approval of any product not specifically named.
- E. For products specified by naming only one product and manufacturer, there is no option, and no substitution will be allowed.
- F. Where specific make or kind of apparatus is called for and furnished by the Contractor, the furnishing of the apparatus does not relieve the Contractor of liability until he shall make such apparatus or appliance operate so it will successfully perform the function for which it is intended.

### 1.5 SUBSTITUTIONS

- A. Within 21 days after date of contract, the Engineer and Owner will consider formal requests from Contractor for substitution of products in place of those specified.
- B. Submit five (5) copies of a request for substitution to the Engineer. Include the following in the request.
  - 1. Complete data substantiating compliance of proposed substitution with Contract Documents.
  - 2. For products:
    - a. Product identification, including manufacturer’s name and address.
    - b. Manufacturer’s literature:
      - 1) Product description
      - 2) Performance and test data
      - 3) Reference standards
    - c. Samples
    - d. Name and address of similar projects on which product was used, and date of installation.
  - 3. Itemized comparison of proposed substitution with product or method specified.
  - 4. Data relating to changes in construction schedule.
  - 5. Accurate cost data on proposed substitution in comparison with product or method specified.
- C. In making request for substitution, Contractor represents:



1. He will make all changes required for the installation of the substituted product or pay the Engineer for the required changes. The first manufacturer listed is the manufacturer on which the design is based. Other manufacturers selected will require verification of dimensions and associated changes by the Contractor.
  2. He has personally investigated the proposed product or method, and determined that it is equal or superior in all respects to that specified.
  3. He will provide the same guarantee for substitution as for the product or method specified.
  4. He will coordinate installation of accepted substitution into work, making such changes as may be required for work to be complete in all respects.
  5. He waives all claims for additional costs related to substitution which consequently becomes apparent.
  6. Cost data is complete and includes all related costs under his contract, but excludes:
    - a. Costs under separate contracts
    - b. Owner redesign
- D. Substitutions will not be considered if:
1. They are indicated or implied on shop drawings or product data submittals without formal request submitted in accordance with this specification.
  2. Acceptance will require substantial revision of Contract Documents.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

**END OF SECTION 01 25 10**

## **SECTION 01 71 10 – STORAGE AND PROTECTION**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### **1.2 SUMMARY**

- A. Section includes requirements for storage and protection of materials and equipment.
- B. Related Requirements:
  - 1. Section 01 10 00, “Scope of Work” for project description and list of equipment.

#### **1.3 DEFINITIONS**

- A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.

#### **1.4 QUALITY ASSURANCE**

- A. Include within the Contractor's quality assurance program such procedures as are required to assure full protection of work and materials.
- B. The Engineer may reject as non-complying such material and products not bearing identification satisfactory to the Engineer as to manufacturer, grade, quality, and other pertinent information.

#### **1.5 MANUFACTURER’S RECOMMENDATIONS**

- A. Deliver products to the job site in manufacturer’s original container with labels intact and legible.
  - 1. Maintain packaged materials with seals unbroken and labels intact until time of use.

#### **1.6 PROTECTION**

- A. Protect finished surfaces through which equipment and materials are handled.
- B. Maintain finished surfaces clean, unmarred, and suitably protected until accepted by the Owner.

#### **1.7 REPAIRS AND REPLACEMENTS**

- A. In event of damage, promptly remove damaged material and unsuitable items from the job site, and with the approval of the Engineer promptly make replacements and repairs with material meeting the specified requirements at no additional cost to the Owner.

- B. Additional time required to secure replacements and to make repairs will not be considered by the Engineer to justify an extension in the Contract Time of Completion.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

**END OF SECTION 01 71 00**



## **SECTION 02 41 19 - SELECTIVE DEMOLITION**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### **1.2 SUMMARY**

- A. Section includes:
  - 1. Demolition of existing approachway ramp concrete panels
  - 2. Demolition of existing approachway bracing and structural members
  - 3. Demolition of existing approachway piles
  - 4. Demolition of existing guard shack
  - 5. Demolition of existing security gate
  - 6. Electrical demolition

#### **1.3 MATERIALS OWNERSHIP**

- A. Unless otherwise indicated, demolition waste becomes property of Contractor.

### **PART 2 - PRODUCTS**

NOT APPLICABLE

### **PART 3 - EXECUTION**

#### **3.1 EXAMINATION**

- A. Contractor to coordinate all electrical work and temporary shutdowns with the Owner and Tenant.
- B. Verify that utilities have been disconnected and capped before starting selective demolition operations.
- C. Review record documents of existing construction provided by Owner. Owner does not guarantee that existing conditions are same as those indicated in record documents.

- D. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.
- E. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Engineer.

### 3.2 SELECTIVE DEMOLITION, GENERAL

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
  - 1. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
  - 2. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
  - 3. Dispose of demolished items and materials promptly.
- B. Existing Items to Remain: Protect construction indicated to remain against damage during selective demolition. When permitted by Engineer, items may be removed to a suitable, protected storage location during selective demolition and reinstalled in their original locations after selective demolition operations are complete.

### 3.3 DISPOSAL OF DEMOLISHED MATERIALS

- A. General: Except for items or materials indicated to be recycled, reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, remove demolished materials from Project site and legally dispose of them.
  - 1. Do not allow demolished materials to accumulate on-site.
  - 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
  - 3. Remove debris from elevated portions of structure by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
- B. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

### 3.4 CLEANING

- A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

### 3.5 SELECTIVE DEMOLITION SCHEDULE

- A. Existing items to be removed include, but are not limited to:

1. Demolition of existing approachway ramp concrete panels
  2. Demolition of existing approachway bracing and structural members
  3. Demolition of existing approachway piles
  4. Demolition of existing guard shack
  5. Demolition of existing security gate
  6. Electrical demolition
- B. Refer to Section 01 10 00, “Scope of Work” for more information on existing items to be demolished.

**END OF SECTION 02 41 19**

## **SECTION 03 41 00 - PRECAST STRUCTURAL CONCRETE**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### **1.2 SUMMARY**

- A. Section Includes:
  - 1. Precast structural concrete.
- B. Related Requirements:
  - 1. Section 05 12 00 "Structural Steel Framing" for furnishing and installing connections attached to structural-steel framing.
  - 2. Section 05 50 00 "Metal Fabrications" for kickers and other miscellaneous steel shapes.

#### **1.3 ALLOWANCES**

- A. Source quality-control testing are part of testing and inspecting allowance.

#### **1.4 ACTION SUBMITTALS**

- A. Design Mixtures: For each precast concrete mixture. Include compressive strength and, if required, water-absorption tests.
- B. Shop Drawings:
  - 1. Include member locations, plans, elevations, dimensions, shapes and sections, openings, support conditions, and types of reinforcement, including special reinforcement.
  - 2. Detail fabrication and installation of precast structural concrete units, including connections at member ends and to adjoining construction.
  - 3. Indicate joints, reveals, drips, chamfers, and extent and location of each surface finish.
  - 4. Indicate separate face and backup mixture locations and thicknesses.
  - 5. Indicate type, size, and length of welded connections by AWS standard symbols.
  - 6. Detail loose and cast-in hardware, lifting and erection inserts, connections, and joints.

7. Indicate locations, tolerances, and details of anchorage devices to be embedded in or attached to structure or other construction.
  8. Include and locate openings larger than 10 inches. Where additional structural support is required, include header design.
  9. Indicate location of each precast structural concrete unit by same identification mark placed on panel.
  10. Indicate relationship of precast structural concrete units to adjacent materials.
  11. Indicate shim sizes and grouting sequence.
  12. If design modifications are proposed to meet performance requirements and field conditions, submit design calculations and Shop Drawings. Do not adversely affect the appearance, durability, or strength of units when modifying details or materials and maintain the general design concept.
- C. Delegated-Design Submittal: For precast structural concrete indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.
1. Show precast structural concrete unit types, connections, types of reinforcement, including special reinforcement, and concrete cover on reinforcement. Indicate location, type, magnitude, and direction of loads imposed on the building structural frame from precast structural concrete.

#### 1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For fabricator.
- B. Welding certificates.
- C. Material Certificates: For the following:
  1. Cementitious materials.
  2. Reinforcing materials.
  3. Admixtures.
  4. Bearing pads.
  5. Insulation.
  6. Structural-steel shapes and hollow structural sections.
- D. Material Test Reports: For aggregates, by a qualified testing agency.
- E. Preconstruction test reports.





- F. Source quality-control reports.
- G. Field quality-control and special inspection reports.

#### 1.6 QUALITY ASSURANCE

- A. Fabricator Qualifications: A firm that assumes responsibility for engineering precast structural concrete units to comply with performance requirements. Responsibility includes preparation of Shop Drawings and comprehensive engineering analysis by a qualified professional engineer.
- B. Quality-Control Standard: For manufacturing procedures, testing requirements, and quality-control recommendations for types of units required, comply with PCI MNL 116, "Manual for Quality Control for Plants and Production of Structural Precast Concrete Products."
- C. Welding Qualifications: Qualify procedures and personnel according to the following:
  - 1. AWS D1.1/D1.1M, "Structural Welding Code - Steel."
  - 2. AWS D1.4/D1.4M, "Structural Welding Code - Reinforcing Steel."

#### 1.7 COORDINATION

- A. Furnish loose connection hardware and anchorage items to be embedded in or attached to other construction before starting that Work. Provide locations, setting diagrams, templates, instructions, and directions, as required, for installation.

#### 1.8 DELIVERY, STORAGE, AND HANDLING

- A. Support units during shipment on nonstaining shock-absorbing material in same position as during storage.
- B. Store units with adequate bracing and protect units to prevent contact with soil, to prevent staining, and to prevent cracking, distortion, warping or other physical damage.
  - 1. Store units with dunnage across full width of each bearing point unless otherwise indicated.
  - 2. Place adequate dunnage of even thickness between each unit.
  - 3. Place stored units so identification marks are clearly visible, and units can be inspected.
- C. Handle and transport units in a manner that avoids excessive stresses that cause cracking or damage.
- D. Lift and support units only at designated points indicated on Shop Drawings.



## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Engage a qualified professional engineer, as defined in Section 01 40 00 "Quality Requirements," to design precast structural concrete units.
- B. Design Standards: Comply with ACI 318 and with design recommendations in PCI MNL 120, "PCI Design Handbook - Precast and Prestressed Concrete," applicable to types of precast structural concrete units indicated.
- C. Structural Performance: Precast structural concrete units and connections shall withstand design loads indicated within limits and under conditions indicated.

### 2.2 MOLD MATERIALS

- A. Molds: Rigid, dimensionally stable, non-absorptive material, warp and buckle free, that provides continuous precast concrete surfaces within fabrication tolerances indicated; nonreactive with concrete and suitable for producing required finishes.
  - 1. Mold-Release Agent: Commercially produced form-release agent that does not bond with, stain, or adversely affect precast concrete surfaces and does not impair subsequent surface or joint treatments of precast concrete.
- B. Form Liners: Units of face design, texture, arrangement, and configuration indicated. Furnish with manufacturer's recommended form-release agent that does not bond with, stain, or adversely affect precast concrete surfaces and does not impair subsequent surface or joint treatments of precast concrete.
- C. Surface Retarder: Chemical set retarder, capable of temporarily delaying setting of newly placed concrete mixture to depth of reveal specified.

### 2.3 REINFORCING MATERIALS

- A. Reinforcing Bars: ASTM A 615/A 615M, Grade 60, deformed.
- B. Low-Alloy-Steel Reinforcing Bars: ASTM A 706/A 706M, deformed.
- C. Supports: Suspend reinforcement from back of mold or use bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire reinforcement in place according to PCI MNL 116.

### 2.4 CONCRETE MATERIALS

- A. Portland Cement: ASTM C 150/C 150M, Type I or Type III, gray, unless otherwise indicated.
  - 1. For surfaces exposed to view in finished structure, use gray or white cement, of same type, brand, and mill source.
- B. Supplementary Cementitious Materials:

1. Fly Ash: ASTM C 618, Class C or F, with maximum loss on ignition of 3 percent.
2. Ground Granulated Blast-Furnace Slag: ASTM C 989, Grade 100 or 120.
- C. Normal-Weight Aggregates: Except as modified by PCI MNL 116, ASTM C 33/C 33M, with coarse aggregates complying with Class 4M. Stockpile fine and coarse aggregates for each type of exposed finish from a single source (pit or quarry) for Project.
- D. Coloring Admixture: ASTM C 979/C 979M, synthetic or natural mineral-oxide pigments or colored water-reducing admixtures, temperature stable, and nonfading.
- E. Water: Potable; free from deleterious material that may affect color stability, setting, or strength of concrete and complying with chemical limits of PCI MNL 116.
- F. Air-Entraining Admixture: ASTM C 260, certified by manufacturer to be compatible with other required admixtures.
- G. Chemical Admixtures: Certified by manufacturer to be compatible with other admixtures and to not contain calcium chloride, or more than 0.15 percent chloride ions or other salts by weight of admixture.
  1. Water-Reducing Admixtures: ASTM C 494/C 494M, Type A.
  2. Retarding Admixture: ASTM C 494/C 494M, Type B.
  3. Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type D.
  4. Water-Reducing and Accelerating Admixture: ASTM C 494/C 494M, Type E.
  5. High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F.
  6. High-Range, Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type G.
  7. Plasticizing Admixture: ASTM C 1017/C 1017M, Type I.
  8. Plasticizing and Retarding Admixture: ASTM C 1017/C 1017M, Type II.
  9. Corrosion-Inhibiting Admixture: ASTM C 1582/C 1582M.

## 2.5 STEEL CONNECTION MATERIALS

- A. Carbon-Steel Shapes and Plates: ASTM A 36/A 36M.
- B. Carbon-Steel-Headed Studs: ASTM A 108, Grade 1010 through 1020, cold finished, AWS D1.1/D1.1M, Type A or B, with arc shields and with minimum mechanical properties of PCI MNL 116.
- C. Carbon-Steel Plate: ASTM A 283/A 283M, Grade C.
- D. High-Strength, Low-Alloy Structural Steel: ASTM A 572/A 572M.

- E. High-Strength Bolts and Nuts: ASTM A 325 or ASTM A 490 Type 1, heavy hex steel structural bolts; heavy hex carbon-steel nuts, ASTM A 563; and hardened carbon-steel washers, ASTM F 436.
  - 1. Do not zinc coat ASTM A 490 bolts.
- F. Shop-Primed Finish: Prepare surfaces of nongalvanized-steel items, except those surfaces to be embedded in concrete, according to requirements in SSPC-SP 3, and shop apply SSPC-Paint 25 according to SSPC-PA 1.
- G. Welding Electrodes: Comply with AWS standards.
- H. Precast Accessories: Provide clips, hangers, plastic or steel shims, and other accessories required to install precast structural concrete units.

## 2.6 BEARING PADS

- A. Provide one of the following bearing pads for precast structural concrete units as recommended by precast fabricator for application:
  - 1. Elastomeric Pads: AASHTO M 251, plain, vulcanized, 100 percent polychloroprene (neoprene) elastomer, molded to size or cut from a molded sheet, 50 to 70 Shore, Type A durometer hardness, ASTM D 2240; minimum tensile strength 2250 psi, ASTM D 412.
  - 2. Random-Oriented-Fiber-Reinforced Elastomeric Pads: Preformed, randomly oriented synthetic fibers set in elastomer. 70 to 90 Shore, Type A durometer hardness, ASTM D 2240; capable of supporting a compressive stress of 3000 psi with no cracking, splitting, or delaminating in the internal portions of pad. Test one specimen for every 200 pads used in Project.

## 2.7 ACCESSORIES

- A. Precast Accessories: Provide clips, hangers, high-density plastic or steel shims, and other accessories required to install structural precast concrete units.

## 2.8 GROUT MATERIALS

- A. Nonmetallic, Nonshrink Grout: Packaged, nonmetallic, noncorrosive, nonstaining grout containing selected silica sands, portland cement, shrinkage-compensating agents, plasticizing and water-reducing agents, complying with ASTM C 1107/C 1107M, Grade A for drypack and Grades B and C for flowable grout and of consistency suitable for application within a 30-minute working time. Water-soluble chloride ion content less than 0.06 percent by weight of cement when tested according to ASTM C 1218/C 1218M.

## 2.9 CONCRETE MIXTURES

- A. Prepare design mixtures for each type of precast concrete required.

1. Use fly ash, pozzolan, ground granulated blast-furnace slag, and silica fume as needed to reduce the total amount of portland cement, which would otherwise be used, by not less than 40 percent.
  2. Limit use of fly ash to [20] [35] percent replacement of portland cement by weight and ground granulated blast-furnace slag to [20] [50] percent of portland cement by weight; metakaolin and silica fume to 10 percent of portland cement by weight.
- B. Design mixtures may be prepared by a qualified independent testing agency or by qualified precast plant personnel at precast structural concrete fabricator's option.
- C. Limit water-soluble chloride ions to maximum percentage by weight of cement permitted by ACI 318 or PCI MNL 116 when tested according to ASTM C 1218/C 1218M.
- D. Normal-Weight Concrete Mixtures: Proportion full-depth mixture by either laboratory trial batch or field test data methods according to ACI 211.1, with materials to be used on Project, to provide normal-weight concrete with the following properties:
1. Compressive Strength (28 Days): 5000 psi.
  2. Maximum Water-Cementitious Materials Ratio: 0.45.
- E. Water Absorption: For structural precast concrete with an architectural finish, limit water absorption to 6 percent by weight or 14 percent by volume, tested according to ASTM C 642, except for boiling requirement.
- F. Add air-entraining admixture at manufacturer's prescribed rate to result in concrete at point of placement having an air content complying with PCI MNL 116.
- G. When included in design mixtures, add other admixtures to concrete mixtures according to manufacturer's written instructions.
- H. Concrete Mix Adjustments: Concrete mix design adjustments may be proposed if characteristics of materials, Project conditions, weather, test results, or other circumstances warrant.

## 2.10 MOLD FABRICATION

- A. Molds: Accurately construct molds, mortar tight, of sufficient strength to withstand pressures due to concrete-placement operations and temperature changes and for prestressing and detensioning operations. Coat contact surfaces of molds with release agent before reinforcement is placed. Avoid contamination of reinforcement and prestressing tendons by release agent.
1. Place form liners accurately to provide finished surface texture indicated. Provide solid backing and supports to maintain stability of liners during concrete placement. Coat form liner with form-release agent.
- B. Maintain molds to provide completed precast structural concrete units of shapes, lines, and dimensions indicated, within fabrication tolerances specified.

1. Form joints are not permitted on faces of structural precast concrete with an architectural finish that is exposed to view in the finished work.
2. Edge and Corner Treatment: Uniformly chamfered.

## 2.11 FABRICATION

- A. Cast-in Anchors, Inserts, Plates, Angles, and Other Anchorage Hardware: Fabricate anchorage hardware with sufficient anchorage and embedment to comply with design requirements. Accurately position for attachment of loose hardware, and secure in place during precasting operations. Locate anchorage hardware where it does not affect position of main reinforcement or concrete placement.
  1. Weld-headed studs and deformed bar anchors used for anchorage according to AWS D1.1/D1.1M and AWS C5.4, "Recommended Practices for Stud Welding."
- B. Furnish loose hardware items including steel plates, clip angles, seat angles, anchors, dowels, cramps, hangers, and other hardware shapes for securing precast structural concrete units to supporting and adjacent construction.
- C. Cast-in reglets, slots, holes, and other accessories in precast structural concrete units as indicated on the Contract Drawings.
- D. Cast-in openings larger than 10 inches in any dimension. Do not drill or cut openings or prestressing strand without Engineer's approval.
- E. Reinforcement: Comply with recommendations in PCI MNL 116 for fabricating, placing, and supporting reinforcement.
  1. Clean reinforcement of loose rust and mill scale, earth, and other materials that reduce or destroy the bond with concrete. When damage to epoxy-coated reinforcement exceeds limits specified in ASTM A 775/A 775M, repair with patching material compatible with coating material and epoxy coat bar ends after cutting.
  2. Accurately position, support, and secure reinforcement against displacement during concrete-placement and consolidation operations. Completely conceal support devices to prevent exposure on finished surfaces.
  3. Place reinforcing steel and prestressing strand to maintain at least 3/4-inch minimum concrete cover. Increase cover requirements for reinforcing steel to 1-1/2 inches when units are exposed to corrosive environment or severe exposure conditions. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position while placing concrete. Direct wire tie ends away from finished, exposed concrete surfaces.
- F. Reinforce precast structural concrete units to resist handling, transportation, and erection stresses and specified in-place loads.
- G. Comply with requirements in PCI MNL 116 and in this Section for measuring, mixing, transporting, and placing concrete. After concrete batching, no additional water may be added.

- H. Place face mixture to a minimum thickness after consolidation of the greater of 1 inch or 1.5 times the maximum aggregate size, but not less than the minimum reinforcing cover specified.
- I. Place concrete in a continuous operation to prevent cold joints or planes of weakness from forming in precast concrete units.
  - 1. Place backup concrete mixture to ensure bond with face-mixture concrete.
- J. Thoroughly consolidate placed concrete by vibration without dislocating or damaging reinforcement and built-in items, and minimize pour lines, honeycombing, or entrapped air voids on surfaces. Use equipment and procedures complying with PCI MNL 116.
  - 1. Place self-consolidating concrete without vibration according to PCI TR-6, "Interim Guidelines for the Use of Self-Consolidating Concrete in Precast/Prestressed Concrete Institute Member Plants." Ensure adequate bond between face and backup concrete, if used.
- K. Comply with PCI MNL 116 procedures for hot- and cold-weather concrete placement.
- L. Identify pickup points of precast structural concrete units and orientation in structure with permanent markings, complying with markings indicated on Shop Drawings. Imprint or permanently mark casting date on each precast structural concrete unit on a surface that does not show in finished structure.
- M. Cure concrete, according to requirements in PCI MNL 116, by moisture retention without heat or by accelerated heat curing using live steam or radiant heat and moisture. Cure units until compressive strength is high enough to ensure that stripping does not have an effect on performance or appearance of final product.
- N. Discard and replace precast structural concrete units that do not comply with requirements, including structural, manufacturing tolerance, and appearance, unless repairs meet requirements in PCI MNL 116 and meet Engineer's approval.

## 2.12 FABRICATION TOLERANCES

- A. Fabricate precast structural concrete units to shapes, lines, and dimensions indicated so each finished unit complies with PCI MNL 116 product dimension tolerances as well as position tolerances for cast-in items.

## 2.13 COMMERCIAL FINISHES

- A. Commercial Grade: Remove fins and protrusions larger than 1/8 inch and fill holes larger than 1/2 inch. Rub or grind ragged edges. Faces must have true, well-defined surfaces. Air holes, water marks, and color variations are permitted. Limit form joint offsets to 3/16 inch.
- B. Screed or float finish unformed surfaces. Strike off and consolidate concrete with vibrating screeds to a uniform finish. Hand screed at projections. Normal color variations, minor indentations, minor chips, and spalls are permitted. Major imperfections, honeycombing, or defects are not permitted.
- C. Apply roughened surface finish according to ACI 318 to precast concrete units that receive concrete topping after installation.



## 2.14 SOURCE QUALITY CONTROL

- A. Testing: Test and inspect precast structural concrete according to PCI MNL 116 requirements and ASTM C 1610/C 1610M, ASTM C 1611/C 1611M, ASTM C 1621/C 1621M, and ASTM C 1712/C 1712M.
  - 1. Test and inspect self-consolidating concrete according to PCI TR-6.
- B. Strength of precast structural concrete units is considered deficient if units fail to comply with ACI 318 requirements for concrete strength.
- C. If there is evidence that strength of precast concrete units may be deficient or may not comply with ACI 318 requirements, employ a qualified testing agency to obtain, prepare, and test cores drilled from hardened concrete to determine compressive strength according to ASTM C 42/C 42M.
  - 1. Report test results in writing on same day that tests are performed, with copies to Engineer, Contractor, and precast concrete fabricator. Test reports include the following:
    - a. Project identification name and number.
    - b. Date when tests were performed.
    - c. Name of precast concrete fabricator.
    - d. Name of concrete testing agency.
    - e. Identification letter, name, and type of precast concrete unit(s) represented by core tests; design compressive strength; type of break; compressive strength at breaks, corrected for length-diameter ratio; and direction of applied load to core in relation to horizontal plane of concrete as placed.
- D. Patching: If core test results are satisfactory and precast structural concrete units comply with requirements, clean and dampen core holes and solidly fill with same precast concrete mixture that has no coarse aggregate, and finish to match adjacent precast concrete surfaces.
- E. Defective Units: Discard and replace precast structural concrete units that do not comply with requirements, including strength, manufacturing tolerances, and color and texture range. Chipped, spalled, or cracked units may be repaired, subject to Engineer's approval. Engineer reserves the right to reject precast units that do not match approved samples, sample panels, and mockups. Replace unacceptable units with precast concrete units that comply with requirements.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine supporting structural frame or foundation and conditions for compliance with requirements for installation tolerances, bearing surface tolerances, and other conditions affecting performance of the Work.



- B. Proceed with installation only after unsatisfactory conditions have been corrected.
- C. Do not install precast concrete units until supporting, cast-in-place concrete has attained minimum allowable design compressive strength and until supporting steel or other structure is structurally ready to receive loads from precast concrete units.

### 3.2 INSTALLATION

- A. Install clips, hangers, bearing pads, and other accessories required for connecting precast structural concrete units to supporting members and backup materials.
- B. Erect precast structural concrete level, plumb, and square within specified allowable tolerances. Provide temporary structural framing, shoring, and bracing as required to maintain position, stability, and alignment of units until permanent connections are complete.
  - 1. Install temporary steel or plastic spacing shims or bearing pads as precast structural concrete units are being erected. Tack weld steel shims to each other to prevent shims from separating.
  - 2. Maintain horizontal and vertical joint alignment and uniform joint width as erection progresses.
  - 3. Remove projecting lifting devices and use plastic patch caps or sand-cement grout to fill voids within recessed lifting devices flush with surface of adjacent precast surfaces when recess is exposed.
  - 4. For hollow-core slab voids used as electrical raceways or mechanical ducts, align voids between units and tape butt joint at end of slabs.
- C. Connect precast structural concrete units in position by bolting, welding, grouting, or as otherwise indicated on Shop Drawings. Remove temporary shims, wedges, and spacers as soon as practical after connecting and grouting are completed.
  - 1. Do not permit connections to disrupt continuity of roof flashing.
- D. Field cutting of precast units is not permitted without approval of Engineer.
- E. Welding: Comply with applicable requirements in AWS D1.1/D1.1M and AWS D1.4/D1.4M for welding, welding electrodes, appearance, quality of welds, and methods used in correcting welding work.
  - 1. Protect precast structural concrete units and bearing pads from damage by field welding or cutting operations, and provide noncombustible shields as required.
  - 2. Clean weld-affected steel surfaces with chipping hammer followed by brushing, and reprime damaged painted surfaces.
  - 3. Visually inspect welds and remove, reweld, or repair incomplete and defective welds.

- F. At bolted connections, use lock washers, tack welding, or other approved means to prevent loosening of nuts after final adjustment.
  - 1. Where slotted connections are used, verify bolt position and tightness. For sliding connections, properly secure bolt but allow bolt to move within connection slot.
  - 2. For slip-critical connections, use one of the following methods to assure proper bolt pretension:
    - a. Turn-of-Nut: According to RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts."
    - b. Calibrated Wrench: According to RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts."
    - c. Twist-off Tension Control Bolt: ASTM F 1852.
    - d. Direct-Tension Control Bolt: ASTM F 1852.
  - 3. For slip-critical connections, use method and inspection procedure approved by Engineer and coordinated with inspection agency.
- G. Grouting or Dry-Packing Connections and Joints: Grout connections and joints and open spaces at keyways, connections, and joints where required or indicated on Shop Drawings. Retain flowable grout in place until hard enough to support itself. Alternatively, pack spaces with stiff dry-pack grout material, tamping until voids are completely filled.
  - 1. Place grout and finish smooth, level, and plumb with adjacent concrete surfaces.
  - 2. Fill joints completely without seepage to other surfaces.
  - 3. Trowel top of grout joints on roofs smooth and uniform. Finish transitions between different surface levels not steeper than 1 to 12.
  - 4. Place grout end cap or dam in voids at ends of hollow-core slabs.
  - 5. Promptly remove grout material from exposed surfaces before it affects finishes or hardens.
  - 6. Keep grouted joints damp for not less than 24 hours after initial set.

### 3.3 ERECTION TOLERANCES

- A. Erect precast structural concrete units level, plumb, square, and in alignment without exceeding the noncumulative erection tolerances of PCI MNL 135.
- B. Minimize variations between adjacent slab members by jacking, loading, or other method recommended by fabricator and approved by Engineer.

### 3.4 FIELD QUALITY CONTROL

- A. Visually inspect field welds and test according to ASTM E 165 or to ASTM E 709 and ASTM E 1444. High-strength bolted connections are subject to inspections.
- B. Repair or remove and replace work where tests and inspections indicate that it does not comply with specified requirements.
- C. Additional testing and inspecting, at Contractor's expense, shall be performed to determine compliance of replaced or additional work with specified requirements.
- D. Prepare test and inspection reports.

### 3.5 REPAIRS

- A. Repair precast structural concrete units if permitted by Engineer.
  - 1. Repairs may be permitted if structural adequacy, serviceability, durability, and appearance of units have not been impaired.
- B. Mix patching materials and repair units so cured patches blend with color, texture, and uniformity of adjacent exposed surfaces and show no apparent line of demarcation between original and repaired work, when viewed in typical daylight illumination from a distance of 20 feet.
- C. Prepare and repair damaged galvanized coatings with galvanizing repair paint according to ASTM A 780/A 780M.
- D. Wire brush, clean, and paint damaged prime-painted components with same type of shop primer.
- E. Remove and replace damaged precast structural concrete units that cannot be repaired or when repairs do not comply with requirements as determined by Engineer.

### 3.6 CLEANING

- A. Clean mortar, plaster, fireproofing, weld slag, and other deleterious material from concrete surfaces and adjacent materials immediately.
- B. Clean exposed surfaces of precast concrete units after erection and completion of joint treatment to remove weld marks, other markings, dirt, and stains.
  - 1. Perform cleaning procedures, if necessary, according to precast concrete fabricator's written recommendations. Protect other work from staining or damage due to cleaning operations.
  - 2. Do not use cleaning materials or processes that could change the appearance of exposed concrete finishes or damage adjacent materials.

**END OF SECTION 03 41 00**



## **SECTION 05 12 00 - STRUCTURAL STEEL FRAMING**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Project Drawings and general provisions of the Contract Documents, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### **1.2 SUMMARY**

- A. Section Includes:
  - 1. Structural steel.
- B. Related Requirements:
  - 1. Section 05 50 00 "Metal Fabrications" for miscellaneous steel fabrications and other steel items not defined as structural steel.
  - 2. Section 09 90 00 "Painting and Coating" for surface-preparation and priming requirements.

#### **1.3 DEFINITIONS**

- A. Structural Steel: Elements of the structural frame indicated on Project Drawings.
- B. Seismic-Load-Resisting System: Elements of structural-steel frame designated as "SLRS" or along grid lines designated as "SLRS" on Project Drawings, including columns, beams, and braces and their connections.
- C. Heavy Sections: Rolled and built-up sections as follows:
  - 1. Shapes included in ASTM A 6/A 6M with flanges thicker than 1-1/2 inches.
  - 2. Welded built-up members with plates thicker than 2 inches.
  - 3. Column base plates thicker than 2 inches.
- D. Demand Critical Welds: Those welds, the failure of which would result in significant degradation of the strength and stiffness of the Seismic-Load-Resisting System and which are indicated as "Demand Critical" or "Seismic Critical" on Project Drawings.

#### **1.4 COORDINATION**

- A. Coordinate installation of anchorage items to be embedded in or attached to other construction without delaying the Work. Provide setting diagrams, sheet metal templates, instructions, and directions for installation.

## 1.5 ACTION SUBMITTALS

- A. Shop Drawings: Show fabrication of structural-steel components.
  - 1. Include details of cuts, connections, splices, camber, holes, and other pertinent data.
  - 2. Include embedment Drawings.
  - 3. Indicate welds by standard AWS symbols, distinguishing between shop and field welds, and show size, length, and type of each weld. Show backing bars that are to be removed and supplemental fillet welds where backing bars are to remain.
  - 4. Indicate type, size, and length of bolts, distinguishing between shop and field bolts. Identify pretensioned and slip-critical, high-strength bolted connections.
  - 5. Identify members and connections of the Seismic-Load-Resisting System.
  - 6. Indicate locations and dimensions of protected zones.
  - 7. Identify demand critical welds.
- B. Welding Procedure Specifications (WPSs) and Procedure Qualification Records (PQRs): Provide according to AWS D1.1/D1.1M, "Structural Welding Code - Steel," for each welded joint, including the following:
  - 1. Power source (constant current or constant voltage).
  - 2. Electrode manufacturer and trade name, for demand critical welds.
- C. Delegated-Design Submittal: For structural-steel connections indicated to comply with design loads, include analysis data.

## 1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For fabricator.
- B. Welding certificates.
- C. Mill test reports for structural steel, including chemical and physical properties.
- D. Product Test Reports: For the following:
  - 1. Bolts, nuts, and washers including mechanical properties and chemical analysis.
  - 2. Tension-control, high-strength, bolt-nut-washer assemblies.
  - 3. Shear stud connectors.
  - 4. Shop primers.
  - 5. Nonshrink grout.

- E. Survey of existing conditions.
- F. Source quality-control reports.
- G. Field quality-control reports.

#### 1.7 QUALITY ASSURANCE

- A. Shop-Painting Applicators: Qualified according to SSPC-QP 3, "Standard Procedure for Evaluating Qualifications of Shop Painting Applicators."
- B. Welding Qualifications: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code - Steel."
  - 1. Welders and welding operators performing work demand-critical welds shall pass the supplemental welder qualification testing, as required by AWS D1.8/D1.8M. FCAW-S and FCAW-G shall be considered separate processes for welding personnel qualification.
  - 2. Weld Testing: Ultrasonic inspection is required for 100% of steel pile filed splice welds. Alternative test methods must be approved, in advance, by the Owner's representative.
  - 3. Weld Test Scheduling: Contractor shall notify Owner's representative a minimum of 24 hours prior to each weld test session.
- C. Comply with applicable provisions of the following specifications and documents:
  - 1. AISC 303.
  - 2. AISC 341 and AISC 341s1.
  - 3. AISC 360.
  - 4. RCSC's "Specification for Structural Joints Using High-Strength Bolts."

#### 1.8 DELIVERY, STORAGE, AND HANDLING

- A. Store materials to permit easy access for inspection and identification. Keep steel members off ground and spaced by using pallets, dunnage, or other supports and spacers. Protect steel members and packaged materials from corrosion and deterioration.
  - 1. Do not store materials on structure in a manner that might cause distortion, damage, or overload to members or supporting structures. Repair or replace damaged materials or structures as directed.
- B. Store fasteners in a protected place in sealed containers with manufacturer's labels intact.
  - 1. Fasteners may be repackaged provided Owner's testing and inspecting agency observes repackaging and seals containers.
  - 2. Clean and relubricate bolts and nuts that become dry or rusty before use.

3. Comply with manufacturers' written recommendations for cleaning and lubricating ASTM F 1852 fasteners and for retesting fasteners after lubrication.

## PART 2 - PRODUCTS

### 2.1 STRUCTURAL-STEEL MATERIALS

- A. W-Shapes: ASTM A 992/A 992M.
- B. Angles, M, S-Shapes: ASTM A 572/A 572M, Grade 50.
- C. Channels, HP Shapes, Plate and Bar: ASTM A 572/A 572M, Grade 50.
- D. Corrosion-Resisting Structural-Steel Shapes, Plates, and Bars: ASTM A 588/A 588M, Grade 50.
- E. Steel Pipe 12" diameter or less: ASTM A 53/A 53M, Type E or Type S, Grade B.
- F. Steel Pipe greater than 12" diameter: ASTM A 252, Grade 3.
- G. HSS Rectangle and HSS Round: ASTM A 500, Grade C.
- H. Welding Electrodes: Comply with AWS requirements.

### 2.2 BOLTS, CONNECTORS, AND ANCHORS

- A. High-Strength Bolts, Nuts, and Washers: ASTM A 325, Type 1, heavy-hex steel structural bolts; ASTM A 563, Grade C, heavy-hex carbon-steel nuts; and ASTM F 436, Type 1, hardened carbon-steel washers.
  1. Finish: Hot-dipped galvanized, unless otherwise noted.
- B. Unheaded Anchor Rods: ASTM F 1554, Grade 55, weldable, straight.
  1. Nuts: ASTM A 563 heavy-hex carbon steel.
  2. Plate Washers: ASTM A 36/A 36M carbon steel.
  3. Washers: ASTM F 436, Type 1, hardened carbon steel.
  4. Finish: Hot-dipped galvanized, unless otherwise noted.
- C. Headed Anchor Rods: ASTM F 1554, Grade 55, weldable, straight.
  1. Nuts: ASTM A 563 heavy-hex carbon steel.
  2. Plate Washers: ASTM A 36/A 36M carbon steel.
  3. Washers: ASTM F 436, Type 1, hardened carbon steel.
  4. Finish: Hot-dipped galvanized, unless otherwise noted.

### 2.3 PRIMER

- A. Primer: Comply with Section 09 90 00 "Painting and Coating."
- B. Galvanizing Repair Paint: Comply with Section 09 90 00 "Painting and Coating."

### 2.4 GROUT

- A. Nonmetallic, Shrinkage-Resistant Grout: ASTM C 1107/C 1107M, factory-packaged, nonmetallic aggregate grout, noncorrosive and nonstaining, mixed with water to consistency suitable for application and a 30-minute working time.

### 2.5 FABRICATION

- A. Structural Steel: Fabricate and assemble in shop to greatest extent possible. Fabricate according to AISC 303, "Code of Standard Practice for Steel Buildings and Bridges," and to AISC 360.
  - 1. Camber structural-steel members where indicated.
  - 2. Fabricate beams with rolling camber up.
  - 3. Identify high-strength structural steel according to ASTM A 6/A 6M and maintain markings until structural steel has been erected.
  - 4. Mark and match-mark materials for field assembly.
  - 5. Complete structural-steel assemblies, including welding of units, before starting shop-priming operations.
- B. Thermal Cutting: Perform thermal cutting by machine to greatest extent possible.
  - 1. Plane thermally cut edges to be welded to comply with requirements in AWS D1.1/D1.1M.
- C. Bolt Holes: Cut, drill, or punch standard bolt holes perpendicular to metal surfaces.
- D. Finishing: Accurately finish ends of columns and other members transmitting bearing loads.
- E. Holes: Provide holes required for securing other work to structural steel and for other work to pass through steel members.
  - 1. Cut, drill, or punch holes perpendicular to steel surfaces. Do not thermally cut bolt holes or enlarge holes by burning.
  - 2. Baseplate Holes: Cut, drill, or punch holes perpendicular to steel surfaces.
  - 3. Weld threaded nuts to framing and other specialty items indicated to receive other work.

### 2.6 SHOP CONNECTIONS

- A. High-Strength Bolts: Shop install high-strength bolts according to RCSC's "Specification for Structural Joints Using High-Strength Bolts" for type of bolt and type of joint specified.



- B. Weld Connections: Comply with AWS D1.1/D1.1M and AWS D1.8/D1.8M for tolerances, appearances, welding electrodes shall be E70XX.
  - 1. Assemble and weld built-up sections by methods that maintain true alignment of axes without exceeding tolerances in AISC 303 for mill material.

## 2.7 SHOP PRIMING

- A. Shop prime steel surfaces except the following:
  - 1. Surfaces embedded in concrete or mortar. Extend priming of partially embedded members to a depth of 2 inches.
  - 2. Surfaces to be field welded.
  - 3. Surfaces of high-strength bolted, slip-critical, adequacy of temporary connections.
  - 4. Surfaces to receive sprayed fire-resistive materials (applied fireproofing).
  - 5. Galvanized surfaces.
  - 6. Surfaces enclosed in interior construction.
- B. Surface Preparation: Clean surfaces to be painted. Remove loose rust and mill scale and spatter, slag, or flux deposits. Prepare surfaces according to the following specifications and standards:
  - 1. SSPC-SP 10/NACE No. 2, "Near-White Blast Cleaning."
- C. Priming: Immediately after surface preparation, apply primer according to manufacturer's written instructions and at rate recommended by SSPC to provide a minimum dry film thickness of 1.5 mils. Use priming methods that result in full coverage of joints, corners, edges, and exposed surfaces.
  - 1. Stripe paint corners, crevices, bolts, paint on surfaces adjacent to field welds, and sharp edges.
  - 2. Apply two coats of shop paint to surfaces that are inaccessible after assembly or erection. Change color of second coat to distinguish it from first.

## 2.8 GALVANIZING

- A. General: Galvanizing shall be in accordance with Section 09 90 00 "Painting and Coating."

## 2.9 SOURCE QUALITY CONTROL

- A. Testing Agency: Contractor shall engage a qualified testing agency to perform shop tests and inspections.
  - 1. Provide testing agency with access to places where structural-steel work is being fabricated or produced to perform tests and inspections.

2. Bolted Connections: Inspect shop-bolted connections according to RCSC's "Specification for Structural Joints Using High-Strength Bolts."
3. Welded Connections: Visually inspect shop-welded connections according to AWS D1.1/D1.1M and the following inspection procedures, at testing agency's option and in compliance with the minimum weld testing requirements outlined in section 2.9.A.5:
  - a. Liquid Penetrant Inspection: ASTM E 165.
  - b. Magnetic Particle Inspection: ASTM E 709; performed on root pass and on finished weld. Cracks or zones of incomplete fusion or penetration are not accepted.
  - c. Ultrasonic Inspection: ASTM E 164.
  - d. Radiographic Inspection: ASTM E 94.
  - e. Complete Joint Penetration welds shall be tested by Radiographic or Ultrasonic Inspections only.
4. In addition to visual inspection, test and inspect shop-welded shear connectors according to requirements in AWS D1.1/D1.1M for stud welding and as follows:
  - a. Perform bend tests if visual inspections reveal either a less-than-continuous 360-degree flash or welding repairs to any shear connector.
  - b. Conduct tests according to requirements in AWS D1.1/D1.1M on additional shear connectors if weld fracture occurs on shear connectors already tested.
5. Minimum Weld Testing Requirements.
  - a. All welds, including structural pipe fabricated from plates, shall be included in a testing program.
  - b. A testing program will be continuous throughout the project. Continuous examination shall be accomplished by selecting random welds during various stages of fabrication. The selected random welds shall be evenly distributed, when possible, among the welders identified by the Welding Certificates (1.6 B) for the project.
  - c. Welds subject to testing will be divided into two groups:
    - 1) Complete Joint Penetration (CJP)
    - 2) Partial Joint Penetration (PJP)
  - d. Within each group (CJP and PJP), ten (10) percent of the welds in that group shall be tested. If no welds are proven to be defective then no further testing in that group need be performed.
  - e. If ten (10) percent or more of the welds tested are proven defective, then the number of welds to be tested in the group shall be increased from ten (10) percent to twenty (20) percent.

- f. If ten (10) percent or more of all the tested welds to this time are proven defective, then all the welds in that group will be tested.
6. Prepare test and inspection reports.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Verify, with certified steel erector present, elevations of concrete- and masonry-bearing surfaces and locations of anchor rods, bearing plates, and other embedments for compliance with requirements.
  1. Prepare a certified survey of existing conditions. Include bearing surfaces, anchor rods, bearing plates, and other embedments showing dimensions, locations, angles, and elevations.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

- A. Provide temporary shores, guys, braces, and other supports during erection to keep structural steel secure, plumb, and in alignment against temporary construction loads and loads equal in intensity to design loads. Remove temporary supports when permanent structural steel, connections, and bracing are in place unless otherwise indicated.
  1. Do not remove temporary shoring supporting composite deck construction until cast-in-place concrete has attained its design compressive strength.

### 3.3 ERECTION

- A. Set structural steel accurately in locations and to elevations indicated and according to AISC 303 and AISC 360.
- B. Baseplates: Clean concrete- and masonry-bearing surfaces of bond-reducing materials, and roughen surfaces prior to setting plates. Clean bottom surface of plates.
  1. Set plates for structural members on wedges, shims, or setting nuts as required.
  2. Weld plate washers to top of baseplate.
  3. Snug-tighten anchor rods after supported members have been positioned and plumbed. Do not remove wedges or shims but, if protruding, cut off flush with edge of plate before packing with grout.
  4. Promptly pack grout solidly between bearing surfaces and plates so no voids remain. Neatly finish exposed surfaces; protect grout and allow to cure. Comply with manufacturer's written installation instructions for shrinkage-resistant grouts.

- C. Maintain erection tolerances of structural steel within AISC 303, "Code of Standard Practice for Steel Buildings and Bridges."
- D. Align and adjust various members that form part of complete frame or structure before permanently fastening. Before assembly, clean bearing surfaces and other surfaces that are in permanent contact with members. Perform necessary adjustments to compensate for discrepancies in elevations and alignment.
  - 1. Level and plumb individual members of structure.
  - 2. Make allowances for difference between temperature at time of erection and mean temperature when structure is completed and in service.
- E. Splice members only where indicated.
- F. Do not use thermal cutting during erection unless approved by Engineer. Finish thermally cut sections within smoothness limits in AWS D1.1/D1.1M.
- G. Do not enlarge unfair holes in members by burning or using drift pins. Ream holes that must be enlarged to admit bolts.
- H. Shear Connectors: Prepare steel surfaces as recommended by manufacturer of shear connectors. Use automatic end welding of headed-stud shear connectors according to AWS D1.1/D1.1M and manufacturer's written instructions.

### 3.4 FIELD CONNECTIONS

- A. High-Strength Bolts: Install high-strength bolts according to RCSC's "Specification for Structural Joints Using High-Strength Bolts" for type of bolt and type of joint specified.
- B. Weld Connections: Comply with AWS D1.1/D1.1M and AWS D1.8/D1.8M for tolerances, appearances, welding procedure specifications, weld quality, and methods used in correcting welding work.
  - 1. Comply with AISC 303 and AISC 360 for bearing, alignment, adequacy of temporary connections, and removal of paint on surfaces adjacent to field welds.
  - 2. Remove backing bars or runoff tabs, back gouge, and grind steel smooth.
  - 3. Assemble and weld built-up sections by methods that maintain true alignment of axes without exceeding tolerances in AISC 303, "Code of Standard Practice for Steel Buildings and Bridges," for mill material.

### 3.5 FIELD QUALITY CONTROL

- A. Special Inspections: Owner will engage a qualified special inspector to perform the following special inspections:
  - 1. Verify structural-steel materials and inspect steel frame joint details.

2. Verify weld materials and inspect welds.
  3. Verify connection materials and inspect high-strength bolted connections.
- B. Testing Agency: Contractor shall engage a qualified testing agency to perform tests and inspections.
1. Bolted Connections: Inspect bolted connections according to RCSC's "Specification for Structural Joints Using High-Strength Bolts."
  2. Welded Connections: Visually inspect field welds according to AWS D1.1/D1.1M.
    - a. In addition to visual inspection, test and inspect field welds according to AWS D1.1/D1.1M and the following inspection procedures, at testing agency's option and in compliance with the minimum weld testing requirements outlined in section 3.6.B.4:
      - 1) Liquid Penetrant Inspection: ASTM E 165.
      - 2) Magnetic Particle Inspection: ASTM E 709; performed on root pass and on finished weld. Cracks or zones of incomplete fusion or penetration are not accepted.
      - 3) Ultrasonic Inspection: ASTM E 164.
      - 4) Radiographic Inspection: ASTM E 94.
      - 5) Complete Joint Penetration welds shall be tested by Radiographic or Ultrasonic Inspections only.
  3. In addition to visual inspection, test and inspect field-welded shear connectors according to requirements in AWS D1.1/D1.1M for stud welding and as follows:
    - a. Perform bend tests if visual inspections reveal either a less-than-continuous 360-degree flash or welding repairs to any shear connector.
    - b. Conduct tests according to requirements in AWS D1.1/D1.1M on additional shear connectors if weld fracture occurs on shear connectors already tested.
  4. Minimum Weld Testing Requirements.
    - a. All welds, including structural pipe fabricated from plates, shall be included in a testing program.
    - b. A testing program will be continuous throughout the project. Continuous examination shall be accomplished by selecting random welds during various stages of fabrication. The selected random welds shall be evenly distributed, when possible, among the welders identified by the Welding Certificates (1.6 B) for the project.
    - c. Welds subject to testing will be divided into two groups:

- 1) Complete Joint Penetration (CJP)
  - 2) Partial Joint Penetration (PJP)
- d. Within each group (CJP and PJP), ten (10) percent of the welds in that group shall be tested. If no welds are proven to be defective then no further testing in that group need be performed.
  - e. If ten (10) percent or more of the welds tested are proven defective, then the number of welds to be tested in the group shall be increased from ten (10) percent to twenty (20) percent.
  - f. If ten (10) percent or more of all the tested welds to this time are proven defective, then all the welds in that group will be tested.
5. Prepare test and inspection reports.

### 3.6 REPAIRS AND PROTECTION

- A. Galvanized Surfaces: Clean areas where galvanizing is damaged or missing and repair galvanizing to comply with ASTM A 780/A 780M.
- B. Touchup Painting: Cleaning and touchup painting are specified in Section 09 90 00 "Painting and Coating."
- C. Touchup Priming: Cleaning and touchup priming are specified in Section 09 90 00 "Painting and Coating."

**END OF SECTION 05 12 00**

## **SECTION 05 50 00 - METAL FABRICATIONS**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### **1.2 SUMMARY**

- A. Section Includes:

- 1. .
- 2. Miscellaneous steel trim including steel angle corner guards and steel edgings.

- B. Related Requirements:

- 1. Section 05 12 00 "Structural Steel Framing."

#### **1.3 COORDINATION**

- A. Coordinate installation of metal fabrications that are anchored to or that receive other work. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

#### **1.4 ACTION SUBMITTALS**

- A. Shop Drawings: Show fabrication and installation details.[ Include plans, elevations, sections, and details of metal fabrications and their connections. Show anchorage and accessory items.] Provide Shop Drawings for the following:

- 1. Miscellaneous steel trim including steel angle corner guards and steel edgings.

#### **1.5 INFORMATIONAL SUBMITTALS**

- A. Welding certificates.

#### **1.6 QUALITY ASSURANCE**

- A. Welding Qualifications: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code - Steel."

- B. Welding Qualifications: Qualify procedures and personnel according to the following:

- 1. AWS D1.1/D1.1M, "Structural Welding Code - Steel."

## 1.7 FIELD CONDITIONS

- A. Field Measurements: Verify actual locations of walls and other construction contiguous with metal fabrications by field measurements before fabrication.

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

### 2.2 METALS

- A. Metal Surfaces, General: Provide materials with smooth, flat surfaces unless otherwise indicated. For metal fabrications exposed to view in the completed Work, provide materials without seam marks, roller marks, rolled trade names, or blemishes.
- B. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M.
- C. Steel Pipe: ASTM A 53/A 53M, Standard Weight (Schedule 40) unless otherwise indicated.

### 2.3 FASTENERS

- A. Steel Bolts and Nuts: Regular hexagon-head bolts, ASTM A 325, Type 1, hot-dipped galvanized unless otherwise noted; with hex nuts, ASTM A 563, Grade C3; and, where indicated, flat washers.
- B. Anchor Bolts: ASTM F 1554, Grade 55, hot-dipped galvanized unless otherwise noted, of dimensions indicated; with nuts, ASTM A 563; and, where indicated, flat washers.
- C. Post-Installed Anchors: Torque-controlled expansion anchors or chemical anchors as indicated on the Project Drawings.

### 2.4 FABRICATION, GENERAL

- A. Shop Assembly: Preassemble items in the shop to greatest extent possible. Disassemble units only as necessary for shipping and handling limitations. Use connections that maintain structural value of joined pieces. Clearly mark units for reassembly and coordinated installation.
- B. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.
- C. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.
- D. Form exposed work with accurate angles and surfaces and straight edges.
- E. Weld corners and seams continuously to comply with the following:
  - 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.





2. Obtain fusion without undercut or overlap.
  3. Remove welding flux immediately.
  4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.
- F. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners or welds where possible. Where exposed fasteners are required, use Phillips flat-head (countersunk) fasteners unless otherwise indicated. Locate joints where least conspicuous.
- G. Fabricate seams and other connections that are exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate.
- H. Cut, reinforce, drill, and tap metal fabrications as indicated to receive finish hardware, screws, and similar items.
- I. Provide for anchorage of type indicated; coordinate with supporting structure. Space anchoring devices to secure metal fabrications rigidly in place and to support indicated loads.
- J. Where units are indicated to be cast into concrete or built into masonry, equip with integrally welded steel strap anchors, 1/8 by 1-1/2 inches, with a minimum 6-inch embedment and 2-inch hook, not less than 8 inches from ends and corners of units and 24 inches o.c., unless otherwise indicated.

## 2.5 MISCELLANEOUS FRAMING AND SUPPORTS

- A. General: Provide steel framing and supports not specified in other Sections as needed to complete the Work.
- B. Fabricate units from steel shapes, plates, and bars of welded construction unless otherwise indicated. Fabricate to sizes, shapes, and profiles indicated and as necessary to receive adjacent construction.
1. Fabricate units from slotted channel framing where indicated.
  2. Furnish inserts for units installed after concrete is placed.
- C. Galvanize miscellaneous framing and supports where indicated.
- D. Prime miscellaneous framing and supports with primer specified in Section 09 90 00 "Painting and Coating" where indicated.

## 2.6 MISCELLANEOUS STEEL TRIM

- A. Unless otherwise indicated, fabricate units from steel shapes, plates, and bars of profiles shown with continuously welded joints and smooth exposed edges. Miter corners and use concealed field splices where possible.

- B. Provide cutouts, fittings, and anchorages as needed to coordinate assembly and installation with other work.
  - 1. Provide with integrally welded steel strap anchors for embedding in concrete or masonry construction.
- C. Galvanize miscellaneous steel trim.

## 2.7 FINISHES, GENERAL

- A. Finish metal fabrications after assembly.
- B. Finish exposed surfaces to remove tool and die marks and stretch lines, and to blend into surrounding surface.

## 2.8 STEEL AND IRON FINISHES

- A. General: Shall be in accordance with Section 09 90 00 "Painting and Coating."
- B. Preparation for Shop Priming Galvanized Items: After galvanizing, thoroughly clean railings of grease, dirt, oil, flux, and other foreign matter, and treat with metallic phosphate process.
- C. Shop prime iron and steel items not indicated to be galvanized unless they are to be embedded in concrete, sprayed-on fireproofing, or masonry, or unless otherwise indicated.
  - 1. Shop prime with universal shop primer unless primers specified in Section 09 99 00 "Painting and Coating" are indicated.
- D. Preparation for Shop Priming: Prepare surfaces to comply with requirements indicated below:
  - 1. Items Indicated to Receive Primers Specified in Section 09 90 00 "Painting and Coating": SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning."
- E. Shop Priming: Apply shop primer to comply with SSPC-PA 1, "Paint Application Specification No. 1: Shop, Field, and Maintenance Painting of Steel," for shop painting.
  - 1. Stripe paint corners, crevices, bolts, welds, and sharp edges.

## PART 3 - EXECUTION

### 3.1 INSTALLATION, GENERAL

- A. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing metal fabrications. Set metal fabrications accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.
- B. Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints but cannot be shop welded because of shipping size limitations. Do not

weld, cut, or abrade surfaces of exterior units that have been hot-dip galvanized after fabrication and are for bolted or screwed field connections.

- C. Field Welding: Comply with the following requirements:
1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
  2. Obtain fusion without undercut or overlap.
  3. Remove welding flux immediately.
  4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.
- D. Fastening to In-Place Construction: Provide anchorage devices and fasteners where metal fabrications are required to be fastened to in-place construction. Provide threaded fasteners for use with concrete and masonry inserts, toggle bolts, through bolts, lag screws, wood screws, and other connectors.
- E. Provide temporary bracing or anchors in formwork for items that are to be built into concrete, masonry, or similar construction.
- F. Corrosion Protection: Coat concealed surfaces of aluminum that come into contact with grout, concrete, masonry, wood, or dissimilar metals with the following:
1. Cast Aluminum: Heavy coat of bituminous paint.
  2. Extruded Aluminum: Two coats of clear lacquer.

### 3.2 INSTALLING MISCELLANEOUS FRAMING AND SUPPORTS

- A. General: Install framing and supports to comply with requirements of items being supported, including manufacturers' written instructions and requirements indicated on Shop Drawings.

### 3.3 ADJUSTING AND CLEANING

- A. Touchup Painting: Cleaning and touchup painting of field welds, bolted connections, and abraded areas of shop paint are specified in Section 09 90 00 "Painting and Coating."

**END OF SECTION 05 50 00**

## SECTION 05 51 19 - METAL GRATING STAIRS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. Section includes industrial-type, straight-run stairs with steel-grating treads and railings attached to metal grating stairs.

#### 1.3 COORDINATION

- A. Coordinate installation of anchorages for metal stairs. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

#### 1.4 INFORMATIONAL SUBMITTALS

- A. Welding certificates.

#### 1.5 QUALITY ASSURANCE

- A. Welding Qualifications: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code - Steel."

### PART 2 - PRODUCTS

#### 2.1 PERFORMANCE REQUIREMENTS

- A. Structural Performance of Stairs: Metal stairs shall withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated:
  1. Uniform Load: 100 lbf/sq. ft..
  2. Concentrated Load: 300 lbf applied on an area of 4 sq. in.
  3. Uniform and concentrated loads need not be assumed to act concurrently.
  4. Stair Framing: Capable of withstanding stresses resulting from railing loads in addition to loads specified above.

5. Limit deflection of treads, platforms, and framing members to  $L/360$ .

## 2.2 METALS

- A. Metal Surfaces, General: Provide materials with smooth, flat surfaces unless otherwise indicated. For components exposed to view in the completed Work, provide materials without seam marks, roller marks, rolled trade names, or blemishes.
- B. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M.
- C. Rolled-Steel Floor Plate: ASTM A 786/A 786M, rolled from plate complying with ASTM A 36/A 36M or ASTM A 283/A 283M, Grade C or D.
- D. Steel Bars for Grating Treads: ASTM A 36/A 36M or steel strip, ASTM A 1011/A 1011M or ASTM A 1018/A 1018M.
- E. Wire Rod for Grating Crossbars: ASTM A 510.

## 2.3 FASTENERS

- A. General: Provide zinc-plated fasteners with coating complying with ASTM B 633 or ASTM F 1941, Class Fe/Zn 12 for exterior use, and Class Fe/Zn 5 where built into exterior walls. Select fasteners for type, grade, and class required.
- B. Bolts and Nuts: Regular hexagon-head bolts, ASTM A 307, Grade A; with hex nuts, ASTM A 563; and, where indicated, flat washers.
- C. Anchor Bolts: ASTM F 1554, Grade 36, of dimensions indicated; with nuts, ASTM A 563; and, where indicated, flat washers.
- D. Post-Installed Anchors: Torque-controlled expansion anchors or chemical anchors capable of sustaining, without failure, a load equal to six times the load imposed when installed in unit masonry and four times the load imposed when installed in concrete, as determined by testing according to ASTM E 488/E 488M, conducted by a qualified independent testing agency.

## 2.4 FABRICATION, GENERAL

- A. Provide complete stair assemblies, including metal framing, hangers, clips, brackets, bearing plates, and other components necessary to support and anchor stairs and platforms on supporting structure.
  1. Join components by welding unless otherwise indicated.
  2. Use connections that maintain structural value of joined pieces.
- B. Form exposed work with accurate angles and surfaces and straight edges.
- C. Weld connections to comply with the following:
  1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.

2. Obtain fusion without undercut or overlap.
  3. Remove welding flux immediately.
  4. Weld exposed corners and seams continuously unless otherwise indicated.
- D. Fabricate joints that are exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate.

## 2.5 STEEL-FRAMED STAIRS

- A. NAAMM Stair Standard: Comply with "Recommended Voluntary Minimum Standards for Fixed Metal Stairs" in NAAMM AMP 510, "Metal Stairs Manual," Industrial Class, unless more stringent requirements are indicated.
- B. Stair Framing:
1. Fabricate stringers of steel channels.
    - a. Provide closures for exposed ends of channel stringers.
- C. Metal Bar-Grating Stairs: Form treads and platforms to configurations shown from metal bar grating; fabricate to comply with NAAMM MBG 531, "Metal Bar Grating Manual."
1. Fabricate treads and platforms from welded steel grating with 1-1/4-by-3/16-inch bearing bars at 15/16 inch o.c. and crossbars at 4 inches o.c.
  2. Surface: Serrated.
  3. Finish: Galvanized.
  4. Fabricate grating treads with rolled-steel floor plate nosing and with steel angle or steel plate carrier at each end for stringer connections. Secure treads to stringers with bolts.

## 2.6 STAIR RAILINGS

- A. Comply with applicable requirements in Section 05 52 13 "Pipe and Angle Railings."
1. Connect posts to stair framing by direct welding unless otherwise indicated.

## 2.7 FINISHES

- A. Finish metal stairs after assembly.
- B. Galvanizing: Hot-dip galvanize items as indicated to comply with ASTM A 153/A 153M for steel and iron hardware and with ASTM A 123/A 123M for other steel and iron products.
1. Do not quench or apply post galvanizing treatments that might interfere with paint adhesion.
  2. Fill vent and drain holes that are exposed in the finished Work, unless indicated to remain as weep holes, by plugging with zinc solder and filing off smooth.

## PART 3 - EXECUTION

### 3.1 INSTALLATION, GENERAL

- A. **Fastening to In-Place Construction:** Provide anchorage devices and fasteners where necessary for securing metal stairs to in-place construction. Include threaded fasteners for concrete and masonry inserts, through-bolts, lag bolts, and other connectors.
- B. **Cutting, Fitting, and Placement:** Perform cutting, drilling, and fitting required for installing metal stairs. Set units accurately in location, alignment, and elevation, measured from established lines and levels and free of rack.
- C. **Field Welding:** Comply with requirements for welding in "Fabrication, General" Article.

### 3.2 INSTALLING METAL STAIRS WITH GROUTED BASEPLATES

- A. Clean concrete and masonry bearing surfaces of bond-reducing materials, and roughen to improve bond to surfaces. Clean bottom surface of baseplates.
- B. Set steel-stair baseplates on wedges, shims, or leveling nuts. After stairs have been positioned and aligned, tighten anchor bolts. Do not remove wedges or shims, but if protruding, cut off flush with edge of bearing plate before packing with grout.
  - 1. Use nonmetallic, nonshrink grout unless otherwise indicated.
  - 2. Pack grout solidly between bearing surfaces and plates to ensure that no voids remain.

### 3.3 ADJUSTING AND CLEANING

- A. **Touchup Painting:** Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces.
  - 1. Apply by brush or spray to provide a minimum 2.0-mil dry film thickness.
- B. **Touchup Painting:** Cleaning and touchup painting of field welds, bolted connections, and abraded areas of shop paint are specified in Section 09 90 00 "Painting and Coating."
- C. **Galvanized Surfaces:** Clean field welds, bolted connections, and abraded areas and repair galvanizing to comply with ASTM A 780/A 780M.

**END OF SECTION 05 51 19**

## **SECTION 05 52 13 - PIPE AND ANGLE RAILINGS**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### **1.2 SUMMARY**

- A. Section Includes:
  - 1. Steel pipe and angle railings.

- B. Related Requirements:

#### **1.3 COORDINATION**

- A. Coordinate selection of shop primers with topcoats to be applied over them. Comply with paint and coating manufacturers' written recommendations to ensure that shop primers and topcoats are compatible with one another.
- B. Coordinate installation of anchorages for railings. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
- C. Schedule installation so attachments are made only to completed structures. Do not support railings temporarily by any means that do not satisfy structural performance requirements.

#### **1.4 ACTION SUBMITTALS**

- A. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.

#### **1.5 INFORMATIONAL SUBMITTALS**

- A. Welding certificates.

#### **1.6 QUALITY ASSURANCE**

- A. Welding Qualifications: Qualify procedures and personnel according to the following:
  - 1. AWS D1.1/D1.1M, "Structural Welding Code - Steel."



## 1.7 DELIVERY, STORAGE, AND HANDLING

- A. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

## 1.8 FIELD CONDITIONS

- A. Field Measurements: Verify actual locations of mounting locations and other construction contiguous with metal fabrications by field measurements before fabrication.

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

- A. Structural Performance: Railings, including attachment to building construction, shall withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated:
  - 1. Handrails and Top Rails of Guards:
    - a. Uniform load of 50 lbf/ ft. applied in any direction.
    - b. Concentrated load of 200 lbf applied in any direction.
    - c. Uniform and concentrated loads need not be assumed to act concurrently.
- B. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes.

### 2.2 METALS, GENERAL

- A. Metal Surfaces, General: Provide materials with smooth surfaces, without seam marks, roller marks, rolled trade names, stains, discolorations, or blemishes.
- B. Brackets, Flanges, and Anchors: Cast or formed metal of same type of material and finish as supported rails unless otherwise indicated.
  - 1. Provide type of bracket with predrilled hole for exposed bolt anchorage and that provides 1-1/2-inch clearance from inside face of handrail to finished wall surface.

### 2.3 STEEL AND IRON

- A. Pipe: ASTM A 53/A 53M, Type F or Type S, Grade A, Standard Weight (Schedule 40), unless another grade and weight are required by structural loads.
- B. Plates, Shapes, and Bars: ASTM A 36/A 36M.

## 2.4 FASTENERS

- A. General: Provide the following:
  - 1. Hot-Dip Galvanized Railings: Type 304 stainless-steel or hot-dip zinc-coated steel fasteners complying with ASTM A 153/A 153M or ASTM F 2329 for zinc coating.
- B. Fasteners for Anchoring Railings to Other Construction: Select fasteners of type, grade, and class required to produce connections suitable for anchoring railings to other types of construction indicated and capable of withstanding design loads.
- C. Fasteners for Interconnecting Railing Components:
  - 1. Provide concealed fasteners for interconnecting railing components and for attaching them to other work, unless exposed fasteners are unavoidable or are the standard fastening method for railings indicated.
  - 2. Provide square or hex socket flat-head machine screws for exposed fasteners unless otherwise indicated.
- D. Post-Installed Anchors: Torque-controlled expansion anchors or chemical anchors capable of sustaining, without failure, a load equal to 6 times the load imposed when installed in unit masonry and 4 times the load imposed when installed in concrete, as determined by testing according to ASTM E 488/E 488M, conducted by a qualified independent testing agency.

## 2.5 FABRICATION

- A. General: Fabricate railings to comply with requirements indicated for design, dimensions, member sizes and spacing, details, finish, and anchorage, but not less than that required to support structural loads.
- B. Shop assemble railings to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation. Use connections that maintain structural value of joined pieces.
- C. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.
- D. Form work true to line and level with accurate angles and surfaces.
- E. Fabricate connections that are exposed to weather in a manner that excludes water. Provide weep holes where water may accumulate.
- F. Cut, reinforce, drill, and tap as indicated to receive finish hardware, screws, and similar items.
- G. Connections: Fabricate railings with welded connections unless otherwise indicated.

- H. Welded Connections: Cope components at connections to provide close fit, or use fittings designed for this purpose. Weld all around at connections, including at fittings.
  - 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
  - 2. Obtain fusion without undercut or overlap.
  - 3. Remove flux immediately.
  - 4. At exposed connections, finish exposed surfaces smooth and blended so no roughness shows after finishing and welded surface matches contours of adjoining surfaces.
- I. Close exposed ends of railing members with prefabricated end fittings.
- J. Provide wall returns at ends of wall-mounted handrails unless otherwise indicated. Close ends of returns unless clearance between end of rail and wall is 1/4 inch or less.
- K. Brackets, Flanges, Fittings, and Anchors: Provide wall brackets, flanges, miscellaneous fittings, and anchors to interconnect railing members to other work unless otherwise indicated.
- L. For removable railing posts, fabricate slip-fit sockets from steel or pipe whose ID is sized for a close fit with posts; limit movement of post without lateral load, measured at top, to not more than one-fortieth of post height. Provide socket covers designed and fabricated to resist being dislodged.
  - 1. Provide chain with eye, snap hook, and staple across gaps formed by removable railing sections at locations indicated. Fabricate from same metal as railings.
- M. Toe Boards: Where indicated, provide toe boards at railings around openings and at edge of open-sided floors and platforms. Fabricate to dimensions and details indicated.

## 2.6 STEEL AND IRON FINISHES

- A. Galvanized Railings:
  - 1. Hot-dip galvanize indicated steel railings, including hardware, after fabrication.
  - 2. Comply with ASTM A 123/A 123M for hot-dip galvanized railings.
  - 3. Comply with ASTM A 153/A 153M for hot-dip galvanized hardware.
  - 4. Do not quench or apply post galvanizing treatments that might interfere with paint adhesion.
  - 5. Fill vent and drain holes that are exposed in the finished Work, unless indicated to remain as weep holes, by plugging with zinc solder and filing off smooth.
- B. For galvanized railings, provide hot-dip galvanized fittings, brackets, fasteners, sleeves, and other ferrous components.

- C. Preparing Galvanized Railings for Shop Priming: After galvanizing, thoroughly clean railings of grease, dirt, oil, flux, and other foreign matter, and treat with etching cleaner.

## PART 3 - EXECUTION

### 3.1 INSTALLATION, GENERAL

- A. Fit exposed connections together to form tight, hairline joints.
- B. Perform cutting, drilling, and fitting required for installing railings. Set railings accurately in location, alignment, and elevation; measured from established lines and levels and free of rack.
  - 1. Set posts plumb within a tolerance of 1/16 inch in 3 feet.
  - 2. Align rails so variations from level for horizontal members and variations from parallel with rake of steps and ramps for sloping members do not exceed 1/4 inch in 12 feet.
- C. Control of Corrosion: Prevent galvanic action and other forms of corrosion by insulating metals and other materials from direct contact with incompatible materials.
  - 1. Coat, with a heavy coat of bituminous paint, concealed surfaces of aluminum that are in contact with grout, concrete, masonry, wood, or dissimilar metals.
- D. Adjust railings before anchoring to ensure matching alignment at abutting joints.
- E. Fastening to In-Place Construction: Use anchorage devices and fasteners where necessary for securing railings and for properly transferring loads to in-place construction.

### 3.2 RAILING CONNECTIONS

- A. Welded Connections: Use fully welded joints for permanently connecting railing components. Comply with requirements for welded connections in "Fabrication" Article whether welding is performed in the shop or in the field.
- B. Expansion Joints: Install expansion joints at locations indicated but not farther apart than required to accommodate thermal movement. Provide slip-joint internal sleeve extending 2 inches beyond joint on either side, fasten internal sleeve securely to one side, and locate joint within 6 inches of post.

### 3.3 ADJUSTING AND CLEANING

- A. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas, and repair galvanizing to comply with ASTM A 780/A 780M.

**END OF SECTION 05 52 13**

## **SECTION 05 53 13 - BAR GRATINGS**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Project Drawings and general provisions of the Contract Documents, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### **1.2 SUMMARY**

- A. Section includes metal bar gratings.
- B. Related Requirements:
  - 1. Section 05 12 00 "Structural Steel Framing" for structural-steel framing system components.
  - 2. Section 05 51 19 "Metal Grating Stair" for grating treads and landings of steel-framed stairs.
  - 3. Section 05 52 13 "Pipe and Angle Railings" for metal pipe and tube handrails and railings.

#### **1.3 ACTION SUBMITTALS**

- A. Shop Drawings: Include fabrication plans, sections, and details.

#### **1.4 QUALITY ASSURANCE**

- A. Welding Qualifications: Qualify procedures and personnel according to the following:
  - 1. AWS D1.1/D1.1M, "Structural Welding Code - Steel."

#### **1.5 FIELD CONDITIONS**

- A. Field Measurements: Verify actual locations of platforms, equipment, and other construction contiguous with gratings by field measurements before fabrication.

### **PART 2 - PRODUCTS**

#### **2.1 METAL BAR GRATINGS**

- A. Metal Bar Grating Standards: Comply with NAAMM MBG 531, "Metal Bar Grating Manual" and NAAMM MBG 532, "Heavy-Duty Metal Bar Grating Manual."
- B. Welded Steel Grating:
  - 1. Bearing Bar Spacing: 1-3/16 inches o.c., unless noted otherwise.

2. Bearing Bar Depth: 1-1/4 inches, unless noted otherwise.
3. Bearing Bar Thickness: 3/16 inch, unless noted otherwise.
4. Crossbar Spacing: 4 inches o.c, unless noted otherwise.
5. Traffic Surface: Serrated, unless noted otherwise.
6. Steel Finish: Hot-dip galvanized with a coating weight of not less than 1.8 oz./sq. ft. of coated surface.

## 2.2 FERROUS METALS

- A. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M.
- B. Steel Bars for Bar Gratings: ASTM A 36/A 36M or steel strip, ASTM A 1011/A 1011M or ASTM A 1018/A 1018M.
- C. Wire Rod for Bar Grating Crossbars: ASTM A 510.

## 2.3 FASTENERS

- A. General: Unless otherwise indicated, provide Type 316 stainless-steel fasteners.

## 2.4 FABRICATION

- A. Shop Assembly: Fabricate grating sections in shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Use connections that maintain structural value of joined pieces. Clearly mark units for reassembly and coordinated installation.
- B. Cut, drill, and punch material cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.
- C. Welding: Comply with AWS recommendations and the following:
  1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
  2. Obtain fusion without undercut or overlap.
  3. Remove welding flux immediately.
- D. Provide for anchorage of type indicated; coordinate with supporting structure. Fabricate and space the anchoring devices to secure gratings, frames, and supports rigidly in place and per the manufacturer's recommendations.

- E. Removable Grating Sections: Fabricate with banding bars attached by welding to entire perimeter of each section. Include anchors and fasteners of type indicated or, if not indicated, as recommended by manufacturer for attaching to supports.
  - 1. Provide no fewer than four saddle clips for each grating section containing rectangular bearing bars 3/16 inch or less in thickness and spaced 15/16 inch or more o.c., with each clip designed and fabricated to fit over two bearing bars.
  - 2. Furnish self-drilling fasteners with washers for securing grating to supports.
- F. Fabricate cutouts in grating sections for penetrations indicated. Arrange cutouts to permit grating removal without disturbing items penetrating gratings.
  - 1. Edge-band openings in grating that interrupt four or more bearing bars with bars of same size and material as bearing bars.
- G. Do not notch bearing bars at supports to maintain elevation.

## 2.5 STEEL FINISHES

- A. Galvanizing: Hot-dip galvanize items as indicated to comply with ASTM A 153/A 153M for steel and iron hardware and with ASTM A 123/A 123M for other steel and iron products.

## PART 3 - EXECUTION

### 3.1 INSTALLATION, GENERAL

- A. Fastening to In-Place Construction: Provide anchorage devices and fasteners where necessary for securing gratings to in-place construction. Include threaded fasteners for concrete and masonry inserts, through-bolts, lag bolts, and other connectors.
- B. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing gratings. Set units accurately in location, alignment, and elevation; measured from established lines and levels and free of rack.
- C. Field Welding: Comply with AWS recommendations and the following:
  - 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
  - 2. Obtain fusion without undercut or overlap.
  - 3. Remove welding flux immediately.

### 3.2 INSTALLING METAL BAR GRATINGS

- A. General: Install gratings to comply with recommendations of referenced metal bar grating standards that apply to grating types and bar sizes indicated, including installation clearances and standard anchoring details.

- B. Attach removable units to supporting members with type and size of clips and fasteners indicated or, if not indicated, as recommended by grating manufacturer for type of installation conditions shown.

### 3.3 ADJUSTING AND CLEANING

- A. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing to comply with ASTM A 780/A 780M.

**END OF SECTION 05 53 13**





**SECTION 09 90 00 – PAINTING AND COATING**

PART 1 - GENERAL

1.1 COATING SCHEDULE

<b>Coating Schedule</b>			
<u>System</u>	<u>Items</u>	<u>Color</u>	<u>Notes</u>
1	[Not Used]		
2	[Not Used]		
3	[Not Used]		
4	[Not Used]		
5	Steel Piles	Black	
6	Structural Steel Framing		
7	[Not Used]		
8	[Not Used]		
9	Handrail	Safety Yellow	
10	[Not Used]		
11	[Not Used]		
12A	[Not Used]		
12B	[Not Used]		
13	[Not Used]		
14	[Not Used]		

## 1.2 RELATED DOCUMENTS

- A. Project Drawings and general provisions of the Contract Documents, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

## 1.3 SUMMARY

- A. Section includes painting and coating requirements:
  - 1. In general, surfaces to be painted include all base carbon steel piping, equipment, tanks, vessels, piles and structural steel, which may be defined in contract documents, drawings or other sections or instructions.
  - 2. Unless specified otherwise, painting is not required over aluminum, masonry, brass, copper, glass, fiberglass reinforced plastic, rubber, or tile.
- B. Related Requirements:
  - 1. Section 05 12 00, "Structural Steel Framing"
  - 2. Section 31 62 16, "Steel Piles"

## 1.4 REFERENCE STANDARDS

- A. Conform to the applicable provisions of the latest editions of standards published by the following organizations:
  - 1. ASTM International (ASTM)
    - a. ASTM A490 Standard Specification for Structural Bolts, Alloy Steel, Heat Treated, 150 ksi Minimum Tensile Strength
    - b. ASTM D522 Standard Test Methods for Mandrel Bend Test of Attached Organic Coatings
    - c. ASTM D523 Standard Test Method for Specular Gloss
    - d. ASTM D2370 Standard Test Method for Tensile Properties of Organic Coatings
    - e. ASTM D2794 Standard Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact)
    - f. ASTM D3363 Standard Test Method for Film Hardness by Pencil Test
    - g. ASTM D4060 Standard Test Method for Abrasion Resistance of Organic Coatings by the Taber Abraser
    - h. ASTM D5894 Standard Practice for Cyclic Salt Fog/UV Exposure of Painted Metal, (Alternating Exposures in a Fog/Dry Cabinet and a UV/Condensation Cabinet)

- i. ASTM G8 Standard Test Methods for Cathodic Disbonding of Pipeline Coatings
- j. ASTM G53 Practice for Operating Light- and Water-Exposure Apparatus (Fluorescent UV-Condensation Type) for Exposure of Nonmetallic Materials
- k. ASTM G85 Standard Practice for Modified Salt Spray (Fog) Testing
- 2. British Standards Institution (BS)
  - a. BS 3900 Methods of test for paints. Index of test methods
- 3. International Organization for Standardization (ISO)
  - a. ISO 2409 Paints and Varnishes -- Cross-Cut Test
  - b. ISO 2812 Paints and Varnishes -- Determination of Resistance to Liquids
  - c. ISO 4624 Paints and Varnishes -- Pull-Off Test for Adhesion
  - d. ISO 6270 Paints and Varnishes -- Determination of Resistance to Humidity
  - e. ISO 7253 Paints and Varnishes -- Determination of Resistance to Neutral Salt (fog)
- 4. The Society for Protective Coatings (SSPC)
  - a. SSPC-PA 1 Shop, Field and Maintenance Painting
  - b. SSPC-PA 2 Measurement of Dry Film Thickness with Magnetic Gages
  - c. SSPC-VIS 1 Visual Standard for Abrasive Blast Cleaned Steel
  - d. SSPC-SP 1 Solvent Cleaning
  - e. SSPC-SP 2 Hand Tool Cleaning
  - f. SSPC-SP 3 Power Tool Cleaning
  - g. SSPC-SP 6 Commercial Blast Cleaning
  - h. SSPC-SP 7 Brush-Off Blast Cleaning
  - i. SSPC-SP 10 Near-White Blast Cleaning
  - j. SSPC-SP 11 Power Tool Cleaning to Bare Metal

## 1.5 DEFINITIONS

- A. Dry Film Thickness (DFT): The thickness of a coating as measured above the substrate.

- B. Mils: The DFT unit of measure in thousandths of an inch.

#### 1.6 ACTION SUBMITTALS

- A. Product Data: For each type of product required. Include the latest issue of the manufacturer's product data sheets with preparation requirements and application instructions. Include material safety data sheets.
- B. Samples Colors for Initial Selection: Submit sample colors for each type of topcoat product indicated for Owner selection and approval.
- C. Product List: Cross-reference to coating system and locations of application areas. Use same designations indicated on Drawings and in schedules (if specified). Include color designations.
- D. Inspection Reports: Submit testing agency inspector qualification certifications and submit field inspection reports for all inspections performed by qualified testing agency.

#### 1.7 QUALITY ASSURANCE

- A. Testing Agency Qualifications: Testing agency inspector must be a SSPC Protective Coatings Inspector Program (PIC) Level 2 certified inspector.

#### 1.8 DELIVERY, STORAGE, AND HANDLING

- A. All materials of coating systems shall be delivered to the job location as full containers and in the original packaging, containing the manufacturer's name, brand, etc.
- B. Store materials not in use in tightly covered containers in well-ventilated areas. Continuously maintain temperatures of materials within the ranges recommended by the product manufacturer.
- C. Protect materials from exposure to direct sunlight. Maintain containers in clean condition, free of foreign materials and residue.
- D. Contractor shall be responsible for proper handling of all paint materials, solvents, thinners, blasting abrasives, and collection of wastes. Wastes include spent thinners, coating sludge, solids, empty paint containers, clean-up rags, etc. Proper handling of these materials shall be in accordance with applicable regulations.
- E. Contractor shall be responsible for the proper disposal of waste materials listed above, and remove rags and waste from storage areas daily. Contractor shall not place materials in Owner's waste containers without prior approval by Owner.

#### 1.9 FIELD CONDITIONS

- A. Apply coatings only when temperature of surfaces to be coated and surrounding air temperatures are within the tolerances provided by the product manufacturer.
- B. Do not apply coatings when relative humidity exceeds 85 percent; at temperatures less than 5° F above the dew point; or to damp or wet surfaces.

- C. Do not apply exterior coatings in snow, rain, fog, or mist.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following approved manufacturers listed in the appropriate coating system schedule.
  - 1. Bredero Shaw
  - 2. Carboline Company
  - 3. Gulf Coast Paint
  - 4. International Paint
  - 5. Jotun
  - 6. PPG Paints
  - 7. Tnemec
  - 8. 3M
  
- B. The following is a list of coating systems included in this specification:
  - a. System 1 – General Purpose
  - b. System 5 – Coal Tar Epoxy Coatings
  - c. System 6 – Steel Immersed or Partially Immersed in Water
  - d. System 7 – Galvanizing
  - e. System 9 – Coating over Galvanized Steel

## 2.2 PAINT AND COATING SYSTEMS

### A. SYSTEM 1 – GENERAL PURPOSE

1. This general purpose system is to be used for a wide range of substrates including piping, vessels, equipment, and structures, including shop fabricated piping and equipment. Maximum operating temperature is 225° F. Special application items are covered by other coating systems of this specification. The system should reflect a Zinc Rich Primer, Epoxy Intermediate, and Polyurethane top coat.

2. Material Options:

<u>Mfg. &amp; Coat</u>	<u>Material</u>	<u>Min.(DFT)</u>
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Carboline:

Primer	<a href="#">CarboZinc 11</a>	2-3 mils
Intermediate	<a href="#">Carbomastic 15</a>	7-10 mils
Top Coat	<a href="#">Carbothane 134 HG</a>	2-3 mils
Total System		11-16 mils

International Paint:

Primer	<a href="#">Interzinc 22HS</a>	2-3 mils
Intermediate	<a href="#">Interseal 670HS</a>	8-10 mils
Top Coat	<a href="#">Interthane 990V</a>	2-3 mils
Total System		12-16 mils

PPG:

Primer	<a href="#">Dimetcote 9</a>	2-4 mils
Intermediate	Amerlock 2/400	8-12 mils
Top Coat	<a href="#">Pitthane Ultra 95-812</a>	2-3 mils
Total System		12-19 mils

Tnemec:

Primer	<a href="#">Teneme-Zinc 90G-1K97</a>	2.5-3.5 mils
Intermediate	Hi-Build Epoxoline66	8-10 mils
Top Coat	<a href="#">Endura-Shield II Series 1094</a>	2-5 mils
Total System		12.5-18.5 mils

3. Verify surface preparation and application instructions and comply with manufacturer's latest data sheets. Comply with most stringent preparation option where conditions allow.

SYSTEM 5 - COAL TAR EPOXY COATINGS

4. Coal tar epoxy coatings are used for steel piles, under-deck structural steel and concrete in a variety of chemical, immersion, and underground conditions above and below the waterline.

5. Material Options:

<u>Mfg. &amp; Coat</u>	<u>Material</u>	<u>Min.(DFT)</u>
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Carboline:

Primer	<a href="#">Bitumastic 300 M</a>	8 mils
Intermediate	<a href="#">Bitumastic 300 M</a>	8 mils
Top Coat	Not Required	Not Required
Total System		16 mils

PPG:

Primer	<a href="#">Amercoat 78HB</a>	8 mils
Intermediate	<a href="#">Amercoat 78HB</a>	8 mils
Top Coat	Not Required	Not Required
Total System		16 mils

Tnemec:

Primer	<a href="#">Teneme-Zinc 90G-1K97</a>	2.5-3.5 mils
Intermediate	<a href="#">Hi-Build Tneme-Tar Series 46H-413</a>	16-20 mils
Top Coat	Not Required	Not Required
Total System		18.5-23.5 mils

6. Verify surface preparation and application instructions and comply with manufacturer's latest data sheets. Comply with most stringent preparation option where conditions allow.

B. SYSTEM 6 – STEEL IMMERSED/PARTIALLY IMMERSED IN WATER

1. For steel piles and structures immersed below the waterline, or partially immersed.
2. Material Options:

<u>Mfg. &amp; Coat</u>	<u>Material</u>	<u>Min.(DFT)</u>
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Carboline:

Primer	Carboguard 1209	4-6 mils
Intermediate	<a href="#">Carboguard 1209</a>	10-40 mils
Top Coat	<a href="#">Not Required</a>	10-40 mils
Total System		24-86 mils

International Paint:

Primer	Not Required	Not Required
Intermediate	<a href="#">Interzone 954</a>	12-14 mils
Top Coat	<a href="#">Interzone 954</a>	12-14 mils
Total System		24-28 mils

PPG:

Primer	Not Required	Not Required
Intermediate	<a href="#">Sigmashield 880 / Amerlock 880</a>	24-40 mils
Top Coat	Not Required	Not Required
Total System		24-40 mils

3. Verify surface preparation and application instructions and comply with manufacturer's latest data sheets. Comply with most stringent preparation option where conditions allow.



C. SYSTEM 7 – GALVANIZING

1. This system is for new construction of steel framing and miscellaneous above deck steel components.
2. Hot Dip Galvanized Finish: Apply zinc coating by the hot dip process to structural steel according to ASTM A 123/A 123M.
  - a. Fill vent and drain holes that are exposed in the finished Work unless they function as weep holes, by plugging with zinc solder and filing off smooth.
  - b. Do not quench or apply post galvanizing treatments that might interfere with paint adhesion.

D. SYSTEM 9 – COATING OVER GALVANIZED STEEL

1. This system is for galvanized steel that requires additional safety color coatings, such as yellow for caution or red for warning/danger.

2. Material Options:

<u>Mfg. &amp; Coat</u>	<u>Material</u>	<u>Min.(DFT)</u>
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Carboline:

Primer	<a href="#">Galoseal</a>	1-2 mils
Intermediate	None Required	None Required
Top Coat	Carbothane 8812	3-5 mils
Total System		4-7 mils

Gulf Coast Paint:

Primer	<a href="#">Chemical Mastic CM-15</a>	3-4 mils
Intermediate	Required	Not Required
Top Coat	<a href="#">CT-370 Chemthane High Build</a>	3-5 mils
Total System		6-9 mils

International Paint:

Primer	<a href="#">Interseal 670HS</a>	4-10 mils
Intermediate	Not Required	Not Required
Top Coat	<a href="#">Interthane 990V</a>	2-3 mils
Total System		10-15 mils

PPG:

Primer	<a href="#">Amerlock 2/400</a>	4-8 mils
Intermediate	None Required	None Required
Top Coat	<a href="#">Pitthane Ultra 95-812</a>	2-3 mils
Total System		6-11 mils

Tnemec:

Primer	Hi-Build Epoxoline 66	2-3 mils
Intermediate	None Required	None Required
Top Coat	Endura-Shield II Series 1094	2.5-3 mils
Total System		4.5-6 mils

3. Verify surface preparation and application instructions and comply with manufacturer's latest data sheets. Comply with most stringent preparation option where conditions allow.

## 2.3 MATERIALS

- A. Provide materials for use within each coating system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
- B. For each coat in a coating system, provide products recommended in writing by manufacturers of topcoat for use in coating system and on substrate indicated.
- C. Provide products of same manufacturer for each coat in a coating system.
- D. VOC Content: Products shall comply with VOC limits of authorities having jurisdiction.
- E. Lead Content: Materials containing lead or other toxic heavy metals shall not be used.
- F. Asbestos Content: Fireproofing materials must be completely free of asbestos.
- G. Colors: As indicated in coating schedule (if listed) or as approved by Owner

## 2.4 PERFORMANCE REQUIREMENTS

- A. Products shall be able to pass the following generally practiced testing methods or equivalent:
  - 1. Primers
    - a. Adhesion: ISO 2409 – Cross cut adhesion classification
    - b. Adhesion: ISO 4624 – Pull-off test for adhesion
    - c. Flexibility: ASTM D522 – Mandrel bend test of attached organic coatings
    - d. Hardness: ASTM D3363 – Film hardness by pencil test
    - e. Impact: ASTM D2794 – Resistance to the effects of rapid deformation (impact)
    - f. Salt Spray: ASTM G85 – Modified salt spray prohesion test
    - g. Salt Spray: ISO 7253 – Resistance to neutral salt spray
    - h. Slip Coeff: SA Research council method for coatings used in ASTM A490 bolted joints
  - 2. Intermediate Coats:
    - a. Abrasion: ASTM D4060 - Abrasion resistance of coatings via the taber abraser
    - b. Adhesion: ISO 4624 – Pull-off test for adhesion
    - c. Cathodic Disbondment: ASTM G8 – Cathodic disbonding of pipeline coatings
    - d. Condensation: ISO 6270 – Resistance to continuous condensation @ 35° C

- e. Cyclic Corrosion: ASTM D5894 – Cyclic salt fog/UV exposure of a coated metal
  - f. Elongation @ Break: ASTM D2370 – Tensile & elongation properties of coatings
  - g. Immersion: ISO 2812 Part 2 – Resistance to water immersion @ 40° C
  - h. Impact: ASTM D2794 – Resistance to the effects of rapid deformation (impact)
  - i. Salt Spray: BS 3900 Part F4 – Resistance to continuous salt spray @ 20° C
  - j. Salt Spray: ISO 7253 – Resistance to neutral salt spray (fog) @ 35° C
  - k. Tensile Strength: ASTM D2370 – Tensile elongation properties of coatings
3. Top Coats:
- a. Abrasion: ASTM D4060 – Abrasion resistance of coatings via the taber abraser
  - b. Adhesion: ISO 2409 – Cross cut adhesion classification
  - c. Adhesion: ISO 4624 – Pull-off test for adhesion
  - d. Flexibility: ASTM D522 – Mandrel bend test of attached organic coatings
  - e. Gloss: ASTM D523 – Standard test method for specular gloss
  - f. Gloss Retention.: ASTM G53 – Fluorescent UV / condensation type exposure
  - g. Hardness: ASTM D3363 – Film hardness by pencil test
  - h. Impact: ASTM D2794 – Resistance to the effects of rapid deformation (impact)

## PART 3 - EXECUTION

### 3.1 PREPARATION - GENERAL

- A. Surface preparation shall comply with material manufacturer's written instructions and these general requirements outlined herein.
- B. Clean substrates of substances that could impair bond of coatings, including rust, mill scale, weld spatter, salts, dust, dirt, oil, grease, and loose paints.
- C. Remove incompatible primers and re-prime substrate with compatible primers or apply tie coat as required to produce coating systems indicated.

- D. Steel Substrates: Remove rust, loose mill scale, and shop primer if any. Clean using methods recommended in writing by paint manufacturer but not less than the following unless noted otherwise:
1. Dry abrasive blast cleaning is the preferred surface preparation method. Other methods may be used depending on the conditions, manufacturer's instructions for the system specified, and with the approval of the Engineer.
    - a. The compressed air supply used for blasting shall be free of detrimental amounts of water and oil. Adequate separators and traps shall be provided and these shall be kept emptied of water and oil. Adequate nozzle pressure (typically 90 psig) shall be maintained.
    - b. The abrasive will be coal slag 1240 black beauty blasting sand, flint, or other acceptable abrasives sized to give the specified anchor profile as determined by SSPC-SP-10-67. A sand mesh will be used as prescribed for the thickness of paint to be applied. The maximum particle size shall be no longer than that passing a 16-mesh screen.
    - c. Edges should be treated to a rounded radius of minimum 2mm, or subjected to three pass grinding or equivalent.
    - d. Remove weld splatter observed before and after blasting by grinder, chipping by hammer, etc.
    - e. Remove all laminations, all surface irregularities on welds and surfaces, and all excessive sharp edges on surfaces by disc sander or grinder.
    - f. Where undercut is to a depth exceeding 1mm and a width smaller than the depth, repair by welding or grinding.
    - g. If surface preparation is done by waterjetting, use the methods described in SSPC-SP12.
    - h. Remove scale by pickling or by mechanical abrasion.
    - i. Heat tint caused by a thickening of the oxide layer should ideally be treated before painting.
- E. Shop-Primed Steel Substrates: Clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with the same material as used for shop priming to comply with SSPC-PA 1 for touching up shop-primed surfaces.
- F. Galvanized-Metal Substrates (If Required): Remove grease and oil residue from galvanized sheet metal by mechanical methods to produce clean, lightly etched surfaces that promote adhesion of subsequently applied coatings.
- G. Aluminum Substrates (If Required): Remove loose surface oxidation.
- H. Concrete Substrates (If Required): Remove release agents, curing compounds, efflorescence, and chalk. Do not coat surfaces if moisture content or alkalinity of surfaces to be coated exceeds that permitted in manufacturer's written instructions.
1. Clean surfaces with pressurized water. Use pressure range of 1500 to 4000 psi at 6 to 12 inches.

2. Abrasive blast clean surfaces to comply with SSPC-SP 7/NACE No. 4, "Brush-Off Blast Cleaning."

I. Masonry Substrates: Remove efflorescence and chalk. Do not coat surfaces if moisture content or alkalinity of surfaces or if alkalinity of mortar joints exceed that permitted in manufacturer's written instructions.

1. Clean surfaces with pressurized water. Use pressure range of 100 to 600 psi at 6 to 12 inches.

### 3.2 APPLICATION

- A. Apply paint and coatings according to manufacturer's written instructions.
- B. If undercoats or other conditions show through final coat, apply additional coats until cured film has a uniform coating finish, color, and appearance.
- C. Apply coatings to produce surface films without cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections. Produce sharp glass lines and color breaks.
- D. Coatings shall be applied in not less than the number of coats specified and shall have dry film thicknesses not less than the minimum thickness indicated.
- E. An adequate moisture trap shall be placed between air supply and pressure-pot pressure feed to gun. Trap will continually bleed off any water or oil from air supply. Lines and pot must be clean before adding new materials. Suitable and working regulators and gauges will be provided for both air supply to pressure-pot and air supply to pressure gun.
- F. Even parallel passes should be made with the spray gun. Arching of the spray gun will not be tolerated. Where deep pitting, or recesses, exist in the steel surface and at weld areas, several passes of the spray gun shall be employed approaching from different sides and perpendicular to all surfaces.
- G. Coating will be brushed on all areas which cannot be properly spray-coated for any reason. Brushes shall be of style and quality that will enable proper application of materials.
- H. Sandblasted cleaned surfaces shall be primed the same day as preparation occurs and before any rusting can form or before the surface becomes contaminated. Should any sandblasted surface be left uncoated overnight, then it will be necessary to sand sweep "brighten up" the surface before the application of the primer.
- I. Only sufficient volumes for the appropriate pot life or application shall be mixed at one time. Manufacturer's recommended pot life shall not be exceeded and when this limit is reached, the spray pot must be emptied, material destroyed, and new material mixed.
- J. Touchup Painting: Immediately after erection, clean exposed areas where coating is damaged or missing and coat with the same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces.

### 3.3 FIELD QUALITY CONTROL

- A. Dry Film Thickness Testing: **[Contractor]** **[Owner]** will engage the services of a qualified testing and inspecting agency to inspect and test coatings for dry film thickness.
  - 1. Contractor shall touch up and restore coated surfaces damaged by testing.
  - 2. If test results show that dry film thickness of applied coating does not comply with coating manufacturer's written recommendations, Contractor shall pay for testing and apply additional coats as needed to provide dry film thickness that complies with coating manufacturer's written recommendations.

### 3.4 CLEANING AND PROTECTION

- A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.
- B. After completing coating application, clean spattered surfaces. Remove spattered coatings by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.
- C. Protect work of other trades against damage from coating operation. Correct damage by cleaning, repairing, replacing, and recoating, as approved by Engineer, and leave in an undamaged condition.
- D. At completion of construction activities of other trades, touch up and restore damaged or defaced coated surfaces.

**END OF SECTION 09 90 00**

## **SECTION 26 05 19 - LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES**

### **PART 1 - GENERAL**

#### **1.1 SUMMARY**

**A. Section Includes:**

1. Building wires and cables rated 600 V and less.
2. Tray cable, Type TC, rated 600 V or less.
3. Metal Clad Cable, Type MC
4. Connectors, splices, and terminations rated 600 V and less.

**B. Related Requirements:**

1. Section 260553 "Identification for Electrical Systems"

#### **1.2 ACTION SUBMITTALS**

- A. Product Data:** For each type of product.

#### **1.3 INFORMATIONAL SUBMITTALS**

- A. Qualification Data:** For testing agency.
- B. Field quality-control reports.**

#### **1.4 QUALITY ASSURANCE**

- A. Testing Agency Qualifications:** Member company of NETA or an NRTL.
1. Testing Agency's Field Supervisor: Certified by NETA to supervise on-site testing.





## PART 2 - PRODUCTS

### 2.1 CONDUCTORS AND CABLES

#### A. MANUFACTURERS

1. Okonite
2. Service Wire Company
3. Southwire
4. Allied Wire and Cable

### 2.2 CONNECTORS AND SPLICES

#### A. MANUFACTURERS

1. ILSCO
2. Thomas & Betts
3. Burndy
4. OZ/Gedney
5. 3M
6. Hubbell Power Systems
7. Marathon
8. Square D – Schneider Electric

- B. Description: Factory-fabricated connectors, splices, and lugs of size, ampacity rating, material, type, and class for application and service indicated; UL listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and use.

### 2.3 SYSTEM DESCRIPTION

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. Comply with NFPA 70.

## PART 3 - EXECUTION

### 3.1 INSTALLATION OF CONDUCTORS AND CABLES

- A. Conceal cables in finished walls, ceilings, and floors unless otherwise indicated.
- B. Complete raceway installation between conductor and cable termination points according to Section 26 05 33 "Raceways and Boxes for Electrical Systems" prior to pulling conductors and cables.
- C. Use manufacturer-approved pulling compound or lubricant where necessary; compound used must not deteriorate conductor or insulation. Do not exceed manufacturer's recommended maximum pulling tensions and sidewall pressure values.
- D. Use pulling means, including fish tape, cable, rope, and basket-weave wire/cable grips, that will not damage cables or raceway.
- E. Install exposed cables parallel and perpendicular to surfaces of exposed structural members, and follow surface contours where possible.
- F. Support cables according to Section 26 05 29 "Hangers and Supports for Electrical Systems."
- G. Complete cable tray systems installation according to Section 26 05 36 "Cable Trays for Electrical Systems" prior to installing conductors and cables.

### 3.2 CONNECTIONS

- A. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A-486B.
- B. Make splices, terminations, and taps that are compatible with conductor material and that possess equivalent or better mechanical strength and insulation ratings than un-spliced conductors.
  - 1. Use oxide inhibitor in each splice, termination, and tap for aluminum conductors.
- C. Wiring at Outlets: Install conductor at each outlet, with 6" slack only.

### 3.3 IDENTIFICATION

- A. Identify and color-code conductors and cables according to Section 26 05 53 "Identification for Electrical Systems."
- B. Identify each spare conductor at each end with identity number and location of other end of conductor, and identify as spare conductor.

3.4 SLEEVE AND SLEEVE-SEAL INSTALLATION FOR ELECTRICAL PENETRATIONS

- A. Install sleeves and sleeve seals at penetrations of exterior floor and wall assemblies. Comply with requirements in Section 26 05 44 "Sleeves and Sleeve Seals for Electrical Raceways and Cabling."

3.5 FIRESTOPPING

- A. Apply firestopping to electrical penetrations of fire-rated floor and wall assemblies to restore original fire-resistance rating of assembly according to Section 07 84 13 "Penetration Firestopping."

3.6 FIELD QUALITY CONTROL

- A. Testing Agency: Engage a qualified testing agency to perform tests and inspections.
- B. Manufacturer's Field Service: Engage a factory-authorized service representative to test and inspect components, assemblies, and equipment installations, including connections.
- C. Perform the following tests and inspections:
  - 1. After installing conductors and cables and before electrical circuitry has been energized, test service entrance and feeder conductors for compliance with requirements.
  - 2. Perform each visual and mechanical inspection and electrical test stated in NETA Acceptance Testing Specification. Certify compliance with test parameters as described in SECTION 26 08 00 - ELECTRICAL SYSTEMS TESTING & COMMISSIONING.
- D. Test and Inspection Reports: Prepare a written report to record the following:
  - 1. Procedures used.
  - 2. Results that comply with requirements.
  - 3. Results that do not comply with requirements and corrective action taken to achieve compliance with requirements.
- E. Cables will be considered defective if they do not pass tests and inspections.

**END OF SECTION 26 05 19**

## **SECTION 26 05 26 - GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS**

### **PART 1 - GENERAL**

#### **1.1 SUMMARY**

- A. Section includes grounding and bonding systems and equipment.
- B. Section includes grounding and bonding systems and equipment, plus the following special applications:
  - 1. Underground distribution grounding.
  - 2. Ground bonding common with lightning protection system.

### **PART 2 - PRODUCTS**

#### **2.1 MANUFACTURERS**

- A. Manufactures: Subject to compliance with requirements, provide products by one of the following:
  - 1. Erico.
  - 2. Alltec Corporation.
  - 3. Harger.
  - 4. Thomas and Betts.

#### **2.2 SYSTEM DESCRIPTION**

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. Comply with UL 467 for grounding and bonding materials and equipment.

#### **2.3 CONDUCTORS**

- A. Insulated Conductors: Copper or wire or cable insulated for 600 V unless otherwise required by applicable Code or authorities having jurisdiction.
- B. Bare Copper Conductors:
  - 1. Solid Conductors: ASTM B 3.

2. Stranded Conductors: ASTM B 8.
3. Bonding Conductor: No. 4 or No. 6 AWG, stranded conductor.
4. Bonding Jumper: Copper tape, braided conductors terminated with copper ferrules; 1-5/8 inches wide and 1/16 inch thick.

#### 2.4 CONNECTORS

- A. Listed and labeled by an NRTL acceptable to authorities having jurisdiction for applications in which used and for specific types, sizes, and combinations of conductors and other items connected.
- B. Bolted Connectors for Conductors and Pipes: Copper or copper alloy , pressure type with at least two bolts.
  1. Pipe Connectors: Clamp type, sized for pipe.
- C. Welded Connectors: Exothermic-welding kits of types recommended by kit manufacturer for materials being joined and installation conditions.

#### 2.5 GROUNDING ELECTRODES

- A. Ground Rods: Copper-clad steel; 3/4 inch by 10 feet.
- B. Chemical-Enhanced Grounding Electrodes: Copper tube, straight or L-shaped, charged with nonhazardous electrolytic chemical salts.
  1. Termination: Factory-attached No. 4/0 AWG bare conductor at least 48 inches long.
  2. Backfill Material: Electrode manufacturer's recommended material.

### PART 3 - EXECUTION

#### 3.1 GROUNDING AT THE SERVICE

- A. Equipment grounding conductors and grounding electrode conductors shall be connected to the ground bus. Install a main bonding jumper between the neutral and ground buses.

#### 3.2 GROUNDING SEPARATELY DERIVED SYSTEMS

- A. Generator: Install grounding electrode(s) at the generator location. The electrode shall be connected to the equipment grounding conductor and to the frame of the generator.

#### 3.3 EQUIPMENT GROUNDING

- A. Install insulated equipment grounding conductors with all feeders and branch circuits.

- B. Install insulated equipment grounding conductors with the following items, in addition to those required by NFPA 70:
  - 1. Feeders and branch circuits.
  - 2. Lighting circuits.
  - 3. Receptacle circuits.
  - 4. Single-phase motor and appliance branch circuits.
  - 5. Three-phase motor and appliance branch circuits.
  - 6. Flexible raceway runs.
  - 7. Armored and metal-clad cable runs.
  - 8. Busway Supply Circuits: Install insulated equipment grounding conductor from grounding bus in the switchgear, switchboard, or distribution panel to equipment grounding bar terminal on busway.
- C. Poles Supporting Outdoor Lighting Fixtures: Install grounding electrode and a separate insulated equipment grounding conductor in addition to grounding conductor installed with branch-circuit conductors.

### 3.4 INSTALLATION

- A. Grounding Conductors: Route along shortest and straightest paths possible unless otherwise indicated or required by Code. Avoid obstructing access or placing conductors where they may be subjected to strain, impact, or damage.
- B. Ground Bonding Common with Lightning Protection System: Comply with NFPA 780 and UL 96 when interconnecting with lightning protection system. Bond electrical power system ground directly to lightning protection system grounding conductor at closest point to electrical service grounding electrode. Use bonding conductor sized same as system grounding electrode conductor, and install in conduit.
- C. Ground Rods: Drive rods until tops are 2 inches below finished floor or final grade unless otherwise indicated.
  - 1. Interconnect ground rods with grounding electrode conductor below grade and as otherwise indicated. Make connections without exposing steel or damaging coating if any.
  - 2. For grounding electrode system, install at least three rods spaced at least one-rod length from each other and located at least the same distance from other grounding electrodes, and connect to the service grounding electrode conductor.

- D. Test Wells: Ground rod driven through drilled hole in bottom of handhole. Handholes are specified in Section 26 05 43 "Underground Ducts and Raceways for Electrical Systems," and shall be at least 12 inches deep, with cover.
  - 1. Test Wells: Install at least one test well for each service unless otherwise indicated. Install at the ground rod electrically closest to service entrance. Set top of test well flush with finished grade or floor.
- E. Bonding Straps and Jumpers: Install in locations accessible for inspection and maintenance except where routed through short lengths of conduit.
  - 1. Bonding to Structure: Bond straps directly to basic structure, taking care not to penetrate any adjacent parts.
  - 2. Bonding to Equipment Mounted on Vibration Isolation Hangers and Supports: Install bonding so vibration is not transmitted to rigidly mounted equipment.
  - 3. Use exothermic-welded connectors for outdoor locations; if a disconnect-type connection is required, use a bolted clamp.
- F. Grounding and Bonding for Piping:
  - 1. Metal Water Service Pipe: Install insulated copper grounding conductors, in conduit, from building's main service equipment, or grounding bus, to main metal water service entrances to building. Connect grounding conductors to main metal water service pipes; use a bolted clamp connector or bolt a lug-type connector to a pipe flange by using one of the lug bolts of the flange. Where a dielectric main water fitting is installed, connect grounding conductor on street side of fitting. Bond metal grounding conductor conduit or sleeve to conductor at each end.
  - 2. Water Meter Piping: Use braided-type bonding jumpers to electrically bypass water meters. Connect to pipe with a bolted connector.
  - 3. Bond each aboveground portion of gas piping system downstream from equipment shutoff valve.
- G. Grounding for Steel Building Structure: Install a driven ground rod at base of each corner column and at intermediate exterior columns at distances not more than 60 feet apart.
- H. Ground Ring: Install a grounding conductor, electrically connected to each building structure ground rod and to each steel column, extending around the perimeter of building.
  - 1. Install tinned-copper conductor not less than No. 2/0 AWG for ground ring and for taps to building steel.
  - 2. Bury ground ring not less than 24 inches from building's foundation.
- I. Concrete-Encased Grounding Electrode (Ufer Ground): Fabricate according to NFPA 70; use a minimum of 20 feet of bare copper conductor not smaller than No. 4 AWG.

1. If concrete foundation is less than 20 feet long, coil excess conductor within base of foundation.
  2. Bond grounding conductor to reinforcing steel in at least four locations and to anchor bolts. Extend grounding conductor below grade and connect to building's grounding grid or to grounding electrode external to concrete.
- J. Concrete-Encased Grounding Electrode (Ufer Ground): Fabricate according to NFPA 70; using electrically conductive coated steel reinforcing bars or rods, at least 20 feet long. If reinforcing is in multiple pieces, connect together by the usual steel tie wires or exothermic welding to create the required length.

### 3.5 FIELD QUALITY CONTROL

- A. Testing Agency: Owner will engage a qualified testing agency to perform tests and inspections.
- B. Tests and Inspections:
1. After installing grounding system but before permanent electrical circuits have been energized, test for compliance with requirements.
  2. Inspect physical and mechanical condition. Verify tightness of accessible, bolted, electrical connections with a calibrated torque wrench according to manufacturer's written instructions.
  3. Test completed grounding system at each location where a maximum ground-resistance level is specified, at service disconnect enclosure grounding terminal, at ground test wells, and at individual ground rods. Make tests at ground rods before any conductors are connected.
- C. Grounding system will be considered defective if it does not pass tests and inspections.
- D. Prepare test and inspection reports.
- E. Report measured ground resistances that exceed the following values:
1. Power and Lighting Equipment or System with Capacity of 500 kVA and Less: 5 ohms.
  2. Power and Lighting Equipment or System with Capacity of 500 to 1000 kVA: 5 ohms.
  3. Power and Lighting Equipment or System with Capacity More Than 1000 kVA: 5 ohms.
  4. Power Distribution Units or Panelboards Serving Electronic Equipment: 3 ohm(s).
  5. Substations and Pad-Mounted Equipment: 5 ohms.
  6. Manhole Grounds: 5 ohms.
- F. Excessive Ground Resistance: If resistance to ground exceeds specified values, notify Engineer promptly and include recommendations to reduce ground resistance.



**END OF SECTION 26 05 26**



## **SECTION 26 05 29 - HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS**

### **PART 1 - GENERAL**

#### **1.1 SUMMARY**

- A. This Section includes the following:
  - 1. Hangers and supports for electrical equipment and systems.

#### **1.2 DEFINITIONS**

- A. EMT: Electrical metallic tubing.
- B. IMC: Intermediate metal conduit.
- C. RMC: Rigid metal conduit.

#### **1.3 QUALITY ASSURANCE**

- A. Welding: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code - Steel."
- B. Comply with NFPA 70.

### **PART 2 - PRODUCTS**

#### **2.1 FABRICATED METAL EQUIPMENT SUPPORT ASSEMBLIES**

- A. Description: Welded or bolted, structural-steel shapes, shop or field fabricated to fit dimensions of supported equipment.

### **PART 3 - EXECUTION**

#### **3.1 APPLICATION**

- A. Maximum Support Spacing and Minimum Hanger Rod Size for Raceway: Space supports for EMT, IMC, and RMC as required by NFPA 70. Minimum rod size shall be 1/4 inch in diameter.

- B. Multiple Raceways or Cables: Install trapeze-type supports fabricated with steel slotted support system, sized so capacity can be increased by at least 25 percent in future without exceeding specified design load limits.
  - 1. Secure raceways and cables to these supports with two-bolt conduit clamps.

### 3.2 SUPPORT INSTALLATION

- A. Strength of Support Assemblies: Where not indicated, select sizes of components so strength will be adequate to carry present and future static loads within specified loading limits. Minimum static design load used for strength determination shall be weight of supported components plus 200 lb.
- B. Mounting and Anchorage of Surface-Mounted Equipment and Components: Anchor and fasten electrical items and their supports to building structural elements by the following methods unless otherwise indicated by code:
  - 1. To Wood: Fasten with lag screws or through bolts.
  - 2. To New Concrete: Bolt to concrete inserts.
  - 3. To Masonry: Approved toggle-type bolts on hollow masonry units and expansion anchor fasteners on solid masonry units.
  - 4. To Existing Concrete: Expansion anchor fasteners.
  - 5. Instead of expansion anchors, powder-actuated driven threaded studs provided with lock washers and nuts may be used in existing standard-weight concrete 4 inches thick or greater. Do not use for anchorage to lightweight-aggregate concrete or for slabs less than 4 inches thick.
  - 6. To Steel: Welded threaded studs complying with AWS D1.1/D1.1M, with lock washers and nuts.
  - 7. To Light Steel: Sheet metal screws.
- C. Drill holes for expansion anchors in concrete at locations and to depths that avoid reinforcing bars.

### 3.3 PAINTING

- A. Touchup: Field welds, hand drilled bolt holes, etc., shall be dressed with zinc cold galvanized or cold tar coating (match existing) for corrosion protection.
- B. Galvanized Surfaces: Clean welds, bolted connections, and abraded areas and apply galvanizing-repair paint to comply with ASTM A 780.

**END OF SECTION 26 05 29**

## **SECTION 26 05 33 - RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS**

### **PART 1 - GENERAL**

#### **1.1 SUMMARY**

- A. Section Includes:
  - 1. Metal conduits, tubing, and fittings.
  - 2. Nonmetal conduits, tubing, and fittings.
  - 3. Boxes, enclosures, and cabinets.

#### **1.2 DEFINITIONS**

- A. ARC: Aluminum rigid conduit.
- B. GRC: Galvanized rigid steel conduit.
- C. IMC: Intermediate metal conduit.

### **PART 2 - PRODUCTS**

#### **2.1 METAL CONDUITS, TUBING, AND FITTINGS**

- A. Listing and Labeling: Metal conduits, tubing, and fittings shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. GRC: Comply with ANSI C80.1 and UL 6.
- C. ARC: Comply with ANSI C80.5 and UL 6A.
- D. IMC: Comply with ANSI C80.6 and UL 1242.
- E. PVC-Coated Steel Conduit: PVC-coated rigid steel conduit.
  - 1. Comply with NEMA RN 1.
  - 2. Coating Thickness: 0.040 inch, minimum.
- F. EMT: Comply with ANSI C80.3 and UL 797.

- G. LFMC: Flexible steel conduit with PVC jacket and complying with UL 360.
- H. Fittings for Metal Conduit: Comply with NEMA FB 1 and UL 514B.
  - 1. Conduit Fittings for Hazardous (Classified) Locations: Comply with UL 886 and NFPA 70.
  - 2. Fittings for RGS
    - a. Form 7
    - b. Material: Feralloy
    - c. Type: Setscrew.
  - 3. Fittings for EMT:
    - a. Material: Steel.
    - b. Type: Setscrew.
  - 4. Expansion Fittings: PVC or steel to match conduit type, complying with UL 651, rated for environmental conditions where installed, and including flexible external bonding jumper.
  - 5. Coating for Fittings for PVC-Coated Conduit: Minimum thickness of 0.040 inch, with overlapping sleeves protecting threaded joints.
- I. Joint Compound for IMC, GRC, or ARC: Approved, as defined in NFPA 70, by authorities having jurisdiction for use in conduit assemblies, and compounded for use to lubricate and protect threaded conduit joints from corrosion and to enhance their conductivity.

## 2.2 NONMETALLIC CONDUITS, TUBING, AND FITTINGS

- A. Listing and Labeling: Nonmetallic conduits, tubing, and fittings shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. ENT: Comply with NEMA TC 13 and UL 1653.
- C. RNC: PVC (SCH per contract drawings), complying with NEMA TC 2 and UL 651 unless otherwise indicated.
- D. LFNC: Comply with UL 1660.
- E. Rigid HDPE: Comply with UL 651A.
- F. Continuous HDPE: Comply with UL 651B.
- G. Fittings for ENT and RNC: Comply with NEMA TC 3; match to conduit or tubing type and material.



- H. Fittings for LFNC: Comply with UL 514B.
- I. Solvent cements and adhesive primers shall have a VOC content of 510 and 550 g/L or less, respectively, when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

### 2.3 BOXES, ENCLOSURES, AND CABINETS

- A. General Requirements for Boxes, Enclosures, and Cabinets: Boxes, enclosures, and cabinets installed in wet locations shall be listed for use in wet locations.
- B. Sheet Metal Outlet and Device Boxes: Comply with NEMA OS 1 and UL 514A.
- C. Cast-Metal Outlet and Device Boxes: Comply with NEMA FB 1, ferrous alloy or aluminum as specified on contract drawings, Type FD, with gasketed cover.
- D. Nonmetallic Outlet and Device Boxes: Comply with NEMA OS 2 and UL 514C.
- E. Gangable boxes are allowed.
- F. Hinged-Cover Enclosures: Comply with UL 50 and NEMA 250, with continuous-hinge cover with flush latch unless otherwise indicated.
  - 1. Metal Enclosures: Steel, finished inside and out with manufacturer's standard enamel.
  - 2. Nonmetallic Enclosures: Fiberglass.
  - 3. Interior Panels: Steel; all sides finished with manufacturer's standard enamel.
- G. Cabinets:
  - 1. NEMA 250, metallic box with removable interior panel and removable front, finished inside and out with manufacturer's standard enamel.
  - 2. Hinged door in front cover with flush latch and concealed hinge.
  - 3. Key latch to match panelboards.
  - 4. Metal barriers to separate wiring of different systems and voltage.
  - 5. Accessory feet where required for freestanding equipment.
  - 6. Nonmetallic cabinets shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

## PART 3 - EXECUTION

### 3.1 RACEWAY APPLICATION

- A. Outdoors: Apply raceway products as specified below unless otherwise indicated:
  - 1. Exposed Conduit: Type per the contract drawings.
  - 2. Concealed Conduit, Aboveground: Type per the contract drawings.
  - 3. Underground Conduit: RNC, Type per the contract drawings.
  - 4. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): Type per the contract drawings.
  - 5. Boxes and Enclosures, Aboveground: NEMA 250, Type per the contract drawings.
- B. Indoors: Apply raceway products as specified below unless otherwise indicated:
  - 1. Type per the contract drawings regardless of the location.
- C. Minimum Raceway Size: 3/4-inch trade size.
- D. Raceway Fittings: Compatible with raceways and suitable for use and location.
  - 1. Rigid and Intermediate Steel Conduit: Use threaded rigid steel conduit fittings unless otherwise indicated. Comply with NEMA FB 2.10.
  - 2. PVC Externally Coated, Rigid Steel Conduits: Use only fittings listed for use with this type of conduit. Patch and seal all joints, nicks, and scrapes in PVC coating after installing conduits and fittings. Use sealant recommended by fitting manufacturer and apply in thickness and number of coats recommended by manufacturer.
  - 3. EMT: Use setscrew, steel fittings. Comply with NEMA FB 2.10.
  - 4. Flexible Conduit: Use only fittings listed for use with flexible conduit. Comply with NEMA FB 2.20.
- E. Install nonferrous conduit or tubing for circuits operating above 60 Hz. Where aluminum raceways are installed for such circuits and pass through concrete, install in nonmetallic sleeve.
- F. Do not install aluminum conduits, boxes, or fittings in contact with concrete or earth.
- G. Install surface raceways only where indicated on Drawings.
- H. Do not install nonmetallic conduit where ambient temperature exceeds 120 deg F.



### 3.2 INSTALLATION

- A. Comply with NFPA 70 limitations for types of raceways allowed in specific occupancies and number of floors.
- B. Keep raceways at least 6 inches away from parallel runs of flues and steam or hot-water pipes. Install horizontal raceway runs above water and steam piping.
- C. Complete raceway installation before starting conductor installation.
- D. Comply with requirements in Section 26 05 29 "Hangers and Supports for Electrical Systems" for hangers and supports.
- E. Arrange stub-ups so curved portions of bends are not visible above finished slab.
- F. Install no more than the equivalent of three 90-degree bends in any conduit run except for control wiring conduits, for which fewer bends are allowed. Support within 12 inches of changes in direction.
- G. Conceal conduit and EMT within finished walls, ceilings, and floors unless otherwise indicated. Install conduits parallel or perpendicular to building lines.
- H. Support conduit within 12 inches of enclosures to which attached.
- I. Installation of conductors and cables:
  - 1. Use manufacturer-approved pulling compound or lubricant where necessary; compound used must not deteriorate conductor or insulation. Do not exceed manufacturer's recommended maximum pulling tensions and sidewall pressure values.
  - 2. Use pulling means including fish tape, cable, rope, and basket-weave wire/cable grips, that will not damage cables or raceway.
- J. Raceways Embedded in Slabs:
  - 1. Run conduit larger than 1-inch trade size, parallel or at right angles to main reinforcement. Where at right angles to reinforcement, place conduit close to slab support. Secure raceways to reinforcement at maximum 10-foot intervals.
  - 2. Arrange raceways to cross building expansion joints at right angles with expansion fittings.
  - 3. Arrange raceways to keep a minimum of 2 inches of concrete cover in all directions unless otherwise noted on contract drawings.
  - 4. Do not embed threadless fittings in concrete unless specifically approved by Engineer for each specific location.



- K. Threaded Conduit Joints, Exposed to Wet, Damp, Corrosive, or Outdoor Conditions: Apply listed compound to threads of raceway and fittings before making up joints. Follow compound manufacturer's written instructions.
- L. Coat field-cut threads on PVC-coated raceway with a corrosion-preventing conductive compound prior to assembly.
- M. Raceway Terminations at Locations Subject to Moisture or Vibration: Use insulating bushings to protect conductors including conductors smaller than No. 4 AWG.
- N. Terminate threaded conduits into threaded hubs or with locknuts on inside and outside of boxes or cabinets. Install bushings on conduits up to 1-1/4-inch trade size and insulated throat metal bushings on 1-1/2-inch trade size and larger conduits terminated with locknuts. Install insulated throat metal grounding bushings on service conduits.
- O. Install raceways square to the enclosure and terminate at enclosures with locknuts. Install locknuts hand tight plus 1/4 turn more.
- P. Do not rely on locknuts to penetrate nonconductive coatings on enclosures. Remove coatings in the locknut area prior to assembling conduit to enclosure to assure a continuous ground path.
- Q. Cut conduit perpendicular to the length. For conduits 2-inch trade size and larger, use roll cutter or a guide to make cut straight and perpendicular to the length.
- R. Install pull wires in empty raceways. Use polypropylene or monofilament plastic line with not less than 200-lb tensile strength. Leave at least 12 inches of slack at each end of pull wire. Cap underground raceways designated as spare above grade alongside raceways in use.
- S. Surface Raceways:
  - 1. Install surface raceway with a minimum 2-inch radius control at bend points.
  - 2. Secure surface raceway with screws or other anchor-type devices at intervals not exceeding 48 inches and with no less than two supports per straight raceway section. Support surface raceway according to manufacturer's written instructions. Tape and glue are not acceptable support methods.
- T. Install raceway sealing fittings at accessible locations according to NFPA 70 and fill them with listed sealing compound. For concealed raceways, install each fitting in a flush steel box with a blank cover plate having a finish similar to that of adjacent plates or surfaces. Install raceway sealing fittings according to NFPA 70.
- U. Install devices to seal raceway interiors at accessible locations. Locate seals so no fittings or boxes are between the seal and the following changes of environments. Seal the interior of all raceways at the following points:
  - 1. Where conduits pass from warm to cold locations, such as boundaries of refrigerated spaces.



2. Where an underground service raceway enters a building or structure.
  3. Where otherwise required by NFPA 70.
- V. Comply with manufacturer's written instructions for solvent welding RNC and fittings.
- W. Expansion-Joint Fittings:
1. Install in each run of aboveground conduit that is located where environmental temperature change may exceed 30 deg F. Install in each run of aboveground conduit as identified per the contract drawings.
- X. Mount boxes at heights indicated on Drawings. If mounting heights of boxes are not individually indicated, give priority to ADA requirements.
- Y. Fasten junction and pull boxes to or support from building structure. Do not support boxes by conduits.

### 3.3 INSTALLATION OF UNDERGROUND CONDUIT

- A. Direct-Buried Conduit:
1. Excavate trench bottom to provide firm and uniform support for conduit.
  2. Install backfill as specified in contract drawings.
  3. After installing conduit, backfill and compact. Start at tie-in point, and work toward end of conduit run, leaving conduit at end of run free to move with expansion and contraction as temperature changes during this process. Firmly hand tamp backfill around conduit to provide maximum supporting strength. After placing controlled backfill to within 12 inches of finished grade, make final conduit connection at end of run and complete backfilling with normal compaction.
  4. Install manufactured rigid steel conduit elbows for stub-ups at poles and equipment and at building entrances through floor.
    - a. Couple steel conduits to ducts with adapters designed for this purpose, and encase coupling with 3 inches of concrete for a minimum of 12 inches on each side of the coupling.
    - b. For stub-ups at equipment mounted on outdoor concrete bases and where conduits penetrate building foundations, extend steel conduit horizontally a minimum of 60 inches from edge of foundation or equipment base. Install insulated grounding bushings on terminations at equipment.
  5. Warning Planks: Bury warning planks approximately 12 inches above direct-buried conduits but a minimum of 6 inches below grade. Align planks along centerline of conduit.



6. Underground Warning Tape: Comply with requirements in Section 26 05 53 "Identification for Electrical Systems."

### 3.4 PROTECTION

- A. Protect coatings, finishes, and cabinets from damage and deterioration.
  1. Repair damage to galvanized finishes with zinc-rich paint recommended by manufacturer.
  2. Repair damage to PVC coatings or paint finishes with matching touchup coating recommended by manufacturer.

**END OF SECTION 26 05 33**



## **SECTION 26 05 44 - SLEEVES AND SLEEVE SEALS FOR ELECTRICAL RACEWAYS AND CABLING**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### **1.2 SCOPE**

- A. This specification describes the requirements for the design, materials fabrication, inspection, testing, and shipping of transit sealing systems used to secure cable, pipe and conduits and prevent the spread of fire, smoke, flammable gases and vapors, dust and water.

#### **1.3 INDUSTRY CODES AND STANDARDS**

- A. National Electrical Manufacturers Association (NEMA).
- B. American Society for Testing Materials (ASTM).
- C. National Fire Protection Association (NFPA).
- D. Underwriters Laboratories (UL).
- E. American Petroleum Institute (API).

#### **1.4 SUMMARY**

- A. Section Includes:
  - 1. Multi-cable transit penetration sealing systems.

#### **1.5 ACTION SUBMITTALS**

- A. Product Data: For each type of product.

### **PART 2 - PRODUCTS**

#### **2.1 MULTI-CABLE TRANSIT PENETRATION SEALING SYSTEMS**

- A. System Description:

1. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
2. Frame: Stainless steel, without flange.
3. Sealing Device: Modular elastomeric (EPDM) blocks, multi diameter, to fill space between wall/floor penetration and raceway or cable.
4. Stayplates: Stainless steel.
5. The system shall be provided with a Mechanical Compression Unit (or compression wedge).

## 2.2 PERFORMANCE REQUIREMENTS

- A. The sealing system shall be rated for the following:
  1. Hazardous locations.
  2. Fire rated.
  3. Non-Blast rated.
- B. Operating temperature range: -40°C to +80°C.
- C. Rodent and Insect Barrier.
- D. The system shall be provided with 40% spare capacity without the requirement to remove or disconnect cables or conduits in place.
- E. The cable transit system shall be capable of sealing a cables, pipes and conduits with outside diameters up to 3 inches.
- F. The cable transit system shall be capable of being bolted or welded in place.
- G. Insulation: The transit system shall provide an insulation value equivalent to the floor, wall or partition in which it is installed.
- H. Ingress protection: The transit system shall prevent the ingress of water and dust with a minimum ingress protection of NEMA 4 as defined by NEMA 250.
- I. Cable Retention: The transit systems shall secure cables without slippage with a force applied to the cable equal to 20 times the value in inches of the cable diameter in Newtons (1 Newton = 0.224 lbs-force) for round cables, or 6 times the value in inches of the cable diameter in Newtons for non-circular cables.
- J. Grounding and Bonding:
  1. Where specified, the transit system shall incorporate provisions for bonding all metal parts.

PART 3 - EXECUTION

3.1 MULTI-CABLE TRANSIT PENETRATION INSTALLATION

- A. Comply with NECA 1.
- B. Comply with NEMA VE 2 for cable tray and cable penetrations.
- C. Comply with manufacturer installation guidelines and recommendations.
- D. The cable transit system shall not compromise the structural integrity of the floor, wall or partition in which it is installed.

3.2 INSPECTION AND TESTING

- A. Transit systems shall be inspected for compliance with all parts of this specification.

**END OF SECTION 26 05 44**



## **SECTION 26 05 53 - IDENTIFICATION FOR ELECTRICAL SYSTEMS**

### **PART 1 - GENERAL**

#### **1.1 SUMMARY**

- A. Section Includes:
1. Identification of power and control cables.
  2. Identification for conductors.
  3. Underground-line warning tape.
  4. Warning labels and signs.
  5. Instruction signs.
  6. Equipment identification labels.
  7. Miscellaneous identification products.

#### **1.2 QUALITY ASSURANCE**

- A. Comply with ANSI A13.1 and IEEE C2.
- B. Comply with NFPA 70.
- C. Comply with 29 CFR 1910.144 and 29 CFR 1910.145.
- D. Comply with ANSI Z535.4 for safety signs and labels.
- E. Adhesive-attached labeling materials, including label stocks, laminating adhesives, and inks used by label printers, shall comply with UL 969.

#### **1.3 COORDINATION**

- A. Coordinate identification names, abbreviations, colors, and other features with requirements as shown in contract drawings.
- B. Coordinate installation of identifying devices with completion of covering and painting of surfaces where devices are to be applied.
- C. Coordinate installation of identifying devices with location of access panels and doors.

## PART 2 - PRODUCTS

### 2.1 ARMORED AND METAL-CLAD CABLE IDENTIFICATION MATERIALS

- A. Comply with ANSI A13.1 for minimum size of letters for legend and for minimum length of color field for each cable size.
- B. Colors for Cables Carrying Circuits:
  - 1. Black letters on an orange field.
  - 2. For Cables over 600 Volts Legend: "DANGER HIGH VOLTAGE WIRING."
- C. Self-Adhesive Vinyl Tape: Colored, heavy duty, waterproof, fade resistant; 2 inches wide; compounded for outdoor use.

### 2.2 POWER AND CONTROL CABLE IDENTIFICATION MATERIALS

- A. Comply with ANSI A13.1 for minimum size of letters for legend and for minimum length of color field for each cable size.
- B. Metal Tags: Brass or aluminum, 2 by 2 by 0.05 inch, with stamped legend, punched for use with self-locking cable tie fastener.

### 2.3 CONDUCTOR IDENTIFICATION MATERIALS (Refer to Contract Drawings for Label Type)

- A. Color-Coding Conductor Tape: Colored, self-adhesive vinyl tape not less than 3 mils thick by 1 to 2 inches wide. (Phase Conductors Only)
- B. Heat-Shrink Preprinted Tubes: Flame-retardant polyolefin tube with machine-printed identification label. Sized to suit diameter of and shrinks to fit firmly around conductor it identifies. Full shrink recovery at a maximum of 200 deg F. Comply with UL 224.
- C. Marker Tapes: Vinyl or vinyl-cloth, self-adhesive wraparound type, with circuit identification legend machine printed by thermal transfer or equivalent process.

### 2.4 UNDERGROUND-LINE WARNING TAPE

- A. Tape:
  - 1. Recommended by manufacturer for the method of installation and suitable to identify and locate underground electrical and communications utility lines.
  - 2. Printing on tape shall be permanent and shall not be damaged by burial operations.
  - 3. Tape material and ink shall be chemically inert, and not subject to degrading when exposed to acids, alkalis, and other destructive substances commonly found in soils.
- B. Color and Printing:
  - 1. Comply with ANSI Z535.1 through ANSI Z535.5.



2. Inscriptions for Red-Colored Tapes: ELECTRIC LINE, HIGH VOLTAGE.
3. Inscriptions for Orange-Colored Tapes: TELEPHONE CABLE, CATV CABLE, COMMUNICATIONS CABLE, OPTICAL FIBER CABLE.

C. Tag: Type II

1. Multilayer laminate consisting of high-density polyethylene scrim coated with pigmented polyolefin, bright-colored, compounded for direct-burial service.
2. Thickness: 12 mils.
3. Weight: 36.1 lb/1000 sq. ft..
4. 3-Inch Tensile According to ASTM D 882: 400 lbf, and 11,500 psi.

## 2.5 WARNING LABELS AND SIGNS

A. Comply with NFPA 70 and 29 CFR 1910.145.

B. Baked-Enamel Warning Signs:

1. Preprinted aluminum signs, punched or drilled for fasteners, with colors, legend, and size required for application.
2. 1/4-inch grommets in corners for mounting.
3. Nominal size, 7 by 10 inches.

## 2.6 INSTRUCTION SIGNS

A. Engraved, laminated acrylic or melamine plastic, minimum 1/16 inch thick for signs up to 20 sq. inches and 1/8 inch thick for larger sizes.

1. Engraved legend with colors as shown on contract drawings.
2. Punched or drilled for mechanical fasteners.
3. Framed with mitered acrylic molding and arranged for attachment at applicable equipment.

## 2.7 EQUIPMENT IDENTIFICATION LABELS

A. Self-Adhesive, Engraved, Laminated Acrylic or Melamine Label: Adhesive backed, colors as shown on contract drawings. Minimum letter height shall be 3/8 inch.

B. Engraved, Laminated Acrylic or Melamine Label: Punched or drilled for screw mounting, colors as shown on contract drawings. Minimum letter height shall be 3/8 inch.

## 2.8 CABLE TIES

- A. UV-Stabilized Cable Ties: Fungus inert, designed for continuous exposure to exterior sunlight, self extinguishing, one piece, self locking, Type 6/6 nylon.
  - 1. Minimum Width: 3/16 inch.
  - 2. Tensile Strength at 73 deg F, According to ASTM D 638: 12,000 psi.
  - 3. Temperature Range: Minus 40 to plus 185 deg F.
  - 4. Color: Black.
- B. Plenum-Rated Cable Ties: Self extinguishing, UV stabilized, one piece, self locking.
  - 1. Minimum Width: 3/16 inch.
  - 2. Tensile Strength at 73 deg F, According to ASTM D 638: 7000 psi.
  - 3. UL 94 Flame Rating: 94V-0.
  - 4. Temperature Range: Minus 50 to plus 284 deg F.
  - 5. Color: Black.

## PART 3 - EXECUTION

### 3.1 INSTALLATION

- A. Verify identity of each item before installing identification products.
- B. Location: Install identification materials and devices at locations for most convenient viewing without interference with operation and maintenance of equipment.
- C. Apply identification devices to surfaces that require finish after completing finish work.
- D. Self-Adhesive Identification Products: Clean surfaces before application, using materials and methods recommended by manufacturer of identification device.
- E. Attach signs and plastic labels that are not self-adhesive type with mechanical fasteners appropriate to the location and substrate.
- F. Attach plastic raceway and cable labels that are not self-adhesive type with clear vinyl tape with adhesive appropriate to the location and substrate.
- G. System Identification Color-Coding Bands for Raceways and Cables: Each color-coding band shall completely encircle cable or conduit. Place adjacent bands of two-color markings in contact, side

by side. Locate bands at changes in direction, at penetrations of walls and floors, at 50-foot maximum intervals in straight runs, and at 25-foot maximum intervals in congested areas.

- H. Aluminum Wraparound Marker Labels and Metal Tags: Secure tight to surface of conductor or cable at a location with high visibility and accessibility.
- I. Cable Ties: For attaching tags. Use general-purpose type, except as listed below:
  - 1. Outdoors: UV-stabilized nylon.
  - 2. In Spaces Handling Environmental Air: Plenum rated.
- J. Underground-Line Warning Tape: During backfilling of trenches install continuous underground-line warning tape directly above line at 12 to 18 inches below finished grade. Use multiple tapes where width of multiple lines installed in a common trench or concrete envelope exceeds 16 inches overall.

### 3.2 IDENTIFICATION SCHEDULE

- A. Concealed Raceways, Duct Banks, More Than 600 V, within Buildings: Tape and stencil 4-inch-wide black stripes on 10-inch centers over orange background that extends full length of raceway or duct and is 12 inches wide. Stencil legend "DANGER CONCEALED HIGH VOLTAGE WIRING" with 3-inch-high black letters on 20-inch centers. Stop stripes at legends. Apply to the following finished surfaces:
  - 1. Floor surface directly above conduits running beneath and within 12 inches of a floor that is in contact with earth or is framed above unexcavated space.
  - 2. Wall surfaces directly external to raceways concealed within wall.
  - 3. Accessible surfaces of concrete envelope around raceways in vertical shafts, exposed in the building, or concealed above suspended ceilings.
- B. Accessible Raceways, Armored and Metal-Clad Cables, More Than 600 V: Self-adhesive vinyl labels. Install labels at 50 foot maximum intervals.
- C. Accessible Raceways and Metal-Clad Cables, 600 V or Less, for Service, Feeder, and Branch Circuits: Identify with self-adhesive vinyl tape applied in bands. Install labels at the end of the cable.
- D. Power-Circuit Conductor Identification, More Than 600 V: For conductors in vaults, pull and junction boxes, manholes, and handholes, use color-coding conductor tape to identify the phase.
  - 1. Color-Coding for Phase and Voltage Level Identification, More Than 600 V: Use colors listed below for ungrounded service feeder and branch-circuit conductors.
    - a. Phase A: Brown
    - b. Phase B: Orange

- c. Phase C: Yellow
  - d. Ground: Green
- E. Power-Circuit Conductor Identification, 600 V or Less: For conductors in vaults, pull and junction boxes, manholes, and handholes, use color-coding conductor tape to identify the phase.
- 1. Color-Coding for Phase and Voltage Level Identification, 600 V or Less: Use colors listed below for ungrounded service feeder and branch-circuit conductors.
    - a. Colors for 120-V 1P Circuits
      - 1) Hot: Black.
      - 2) Neutral: White.
      - 3) Ground: Green.
    - b. Colors for 240-V 1P Circuits
      - 1) Hot (L1): Black
      - 2) Hot (L2): Red
      - 3) Neutral: White
      - 4) Ground: Green
    - c. Colors for 208-V 1P Circuits
      - 1) Hot: Black.
      - 2) Neutral: White.
      - 3) Ground: Green.
    - d. Colors for 208-V 3P Circuits
      - 1) Phase A: Black.
      - 2) Phase B: Red.
      - 3) Phase C: Blue.
      - 4) Ground: Green.
    - e. Colors for 480-V 1P Circuits
      - 1) Hot: Black.
      - 2) Neutral: White.



- 3) Ground: Green.
  - f. Colors for 480/277-V 3P Circuits:
    - 1) Phase A: Brown.
    - 2) Phase B: Orange.
    - 3) Phase C: Yellow.
    - 4) Ground: Green.
  - g. Color-Coding Conductor Tape: Apply in half-lapped turns for a minimum distance of 6 inches from terminal points and in boxes where splices or taps are made. Apply last two turns of tape with no tension to prevent possible unwinding. Locate bands to avoid obscuring factory cable markings.
- F. Locations of Underground Lines: Identify with underground-line warning tape for power, lighting, communication, and control wiring and optical fiber cable.
- 1. Limit use of underground-line warning tape to direct-buried cables.
  - 2. Install underground-line warning tape for both direct-buried cables and cables in raceway.
- G. Control-Circuit Conductor Identification, 600 V or Less: For conductors in control panels, use color-coding conductor tape to identify the conductors.
- 1. All ungrounded control circuits operating at the supply voltage of 120 VAC: Black.
  - 2. Ungrounded AC control circuits operating at a voltage less than the supply voltage of 120 VAC: Red.
  - 3. Ungrounded DC control circuits: Blue.
  - 4. Ungrounded control circuits, such as for cabinet lighting, that remain energized when the main disconnect is in the “Off” position: Yellow.
  - 5. Grounded AC current-carrying control circuit conductor, regardless of voltage: White.
  - 6. Grounded DC current-carrying circuit conductor: White with Blue Stripe.
  - 7. Grounded AC control circuit current-carrying conductor that remains energized when the main disconnect is in the “Off” position: White with Yellow Stripe.
  - 8. Ground/Earth Ground: Green.
  - 9. Instrument Ground: Yellow with Green Stripe.
- H. Instrument/Control Cable Identification, 24 VDC or less: For conductors in control panels, use color-coding conductor tape to identify the conductors.

1. 2 Wire DC Ungrounded –Red (+), Black (-).
  2. 3 Wire DC Ungrounded – Red (+), White (Center Tap), Black (-).
  3. Shielded Pairs: Refer to Manufacturer’s color code charts.
  4. Shielded Triads: Refer to Manufacturer’s color code charts.
  5. Multi-conductor Cables: Refer to Manufacturer’s color code charts.
- I. Warning Labels for Indoor Cabinets, Boxes, and Enclosures for Power and Lighting:
1. Comply with 29 CFR 1910.145.
  2. Identify system voltage with black letters on an orange background.
  3. Apply to exterior of door, cover, or other access.

**END OF SECTION 26 05 53**



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**SECTION 26 08 00 - ELECTRICAL SYSTEMS TESTING & COMMISSIONING**

Table of Contents

1.0	GENERAL .....	3
1.1.	Scope.....	3
1.2.	Definitions.....	3
1.3.	Reference Documents .....	4
1.4.	Labor, Materials and Equipment .....	4
2.0	DOCUMENTATION .....	4
2.1.	General .....	4
2.2.	Inspection and Testing Checklists.....	4
2.3.	Punch Lists .....	5
2.4.	As-Built Drawings .....	5
3.0	SAFETY.....	5
3.1.	General .....	5
3.2.	Lockout Procedure .....	6
4.0	GENERAL INSPECTION AND TEST PROCEDURES .....	6
4.1.	General .....	6
4.2.	Insulation Resistance.....	7
4.3.	High Potential Testing.....	8
4.4.	Vibration.....	12
4.5.	Protective Relays.....	12
4.6.	Electrical Equipment Insulating Oil Testing.....	12
5.0	SPECIFIC INSPECTIONS AND TESTS .....	13
5.1.	Conduit System .....	13
5.2.	Cable Tray and Cable Support System .....	15
5.3.	Wire and Cable.....	15
5.4.	Switchgear, Motor Control Equipment, and 480 VAC Switchracks .....	17
5.5.	Transformers.....	18

5.6. Bus Duct ..... 19

5.7. Uninterruptible Power Supply (UPS) ..... 20

5.8. Battery and Battery Charger ..... 20

5.9. Panelboards ..... 21

5.10. Grounding ..... 22

5.11. Grounding Resistors ..... 23

5.12. Motors and Motor Control ..... 24

5.13. Generators ..... 26

5.14. Programmable Controllers ..... 27

5.15. Lighting ..... 27

5.16. Receptacles ..... 28

5.17. Communication and Alarm Systems ..... 28

5.18. Aids to Navigation ..... 28

5.19. Lightning Protection ..... 28

5.20. Heat Tracing ..... 28

5.21. Miscellaneous Electrical Equipment ..... 29

6.0 TESTING FORMS ..... 29



## **1.0 GENERAL**

### **1.1 Scope**

This Specification covers requirements for checkout and commissioning of newly installed or overhauled electrical facilities. The requirements of this Specification include the inspection of electrical facilities throughout the construction phase. The requirements for construction of electrical facilities are contained in the Project Construction Specification.

These requirements reflect only the minimum standards and procedures to be followed before electrical facilities are accepted by the owner. It shall be the Contractor's responsibility to perform any additional checkouts or tests necessary to provide a safe, reliable and functionally complete installation.

**1.1.1.** Written procedures for check and subsequent commissioning of electrical equipment shall be developed. Procedures shall include detailed checklists as included in these specifications or as typically used by the contractor.

**1.1.2.** Written procedures shall be submitted to Engineer for approval at least four weeks prior to scheduled commencement of checkout and commissioning activities.

### **1.2 Definitions**

**1.2.1.** Specification - This document

**1.2.2.** Owner - Owner or owner's representative responsible for ensuring that all work is performed in accordance with this specification.

**1.2.3.** Contractor - The organization that has agreed to receive payment to inspect and test each component and the total system as described in this specification to ensure that each component individually and all components as a system function as intended.

**1.2.4.** Checkout is defined as bringing a system to a state of readiness for startup. It includes, but is not limited to, visual inspections, insulation resistance and dielectric tests, functional tests of control systems, calibration, and alignments.

**1.2.5.** Commissioning is defined as bringing a system to operating conditions. It includes, but is not limited to, energizing all electrical equipment and subjecting it to the available load, running of motors, and checking illumination provided by lighting systems.

**1.2.6.** Acceptance is defined as the point at which the owner considers a system functional and operational. Acceptance will occur after a system has been started and operated to satisfactorily demonstrate complete system integrity.

**1.2.7.** System is defined as a logical subdivision of the overall electrical facility. The owner and the Contractor shall jointly decide how to subdivide the facility into separate systems.

Owner acceptance of the overall facility will occur only after all systems have been accepted.

### **1.3. Reference Documents**

#### **1.3.1. Codes and Standards**

The latest revisions of the following codes and standards shall be considered a part of this Specification:

American Petroleum Institute (API)

American Society for Testing and Materials (ASTM)

Institute of Electrical and Electronics Engineers (IEEE)

Local Codes and Standards

National Electrical Manufacturers Association (NEMA)

National Fire Protection Association (NFPA) including the National Electrical Code (NFPA 70)

Occupational Health and Safety Administration (OSHA)

Underwriters Laboratories (UL)

### **1.4. Labor, Materials and Equipment**

The Contractor shall supply all labor, materials, utilities, tools, test equipment and other items required to complete the work outlined in this Specification. The owner has the right to reject any tools or equipment which it feels are inadequate or inappropriate for the application.

## **2.0 DOCUMENTATION**

### **2.1. General**

**2.1.1.** Prior to initiating any work, the Contractor shall review and become familiar with all applicable specifications, drawings, data sheets, codes and standards, and Vendor documentation. The owner will resolve any conflicts between these documents. The Contractor shall not perform any tests that would void Vendor warranties.

### **2.2. Inspection and Testing Checklists**

**2.2.1.** The Contractor shall use the inspection and testing checklists listed in Section 6.0 of this Specification to indicate completion of inspections and to record test data. Any additional required forms shall be developed by the Contractor and approved by the owner. Should

the Contractor wish to utilize alternate forms or modify the forms, prior written owner approval is required.

**2.2.2.** The owner reserves the right to witness all checkout and commissioning activities and shall be notified in advance. The extent to which the owner wishes to be notified of these activities and the timing of the advance notice shall be agreed upon by owner and Contractor personnel. The owner's field representative will initial the appropriate checklist entry after witnessing each activity.

**2.2.3.** The inspection and testing checklists listed in Section 6.0 contain specific requirements which may not be included in the body of this Specification. The Contractor shall complete all inspections and tests listed on these forms as applicable to the project.

### **2.3. Punch Lists**

**2.3.1.** The Contractor shall be responsible for ensuring that all electrical installations are in accordance with project documents. The Contractor shall document all discrepancies in a punch list which shall be submitted to the owner for review. The Contractor shall take prompt action to remedy all discrepancies. Punch list items which have been resolved shall be initialed by both the Contractor field personnel and the owner's field personnel.

### **2.4. As-Built Drawings**

The Contractor shall maintain a "red-line" set of all construction and Vendor drawings throughout the project. This drawing set shall reflect all changes made throughout checkout and commissioning. At the conclusion of the project, these changes shall be submitted to the owner as a basis for "As-Built" drawing development.

## **3.0 SAFETY**

### **3.1. General**

**3.1.1.** Personnel safety shall be of primary concern throughout checkout and commissioning of the electrical facilities. The Contractor shall have a comprehensive safety program in effect at all times throughout the project. In addition, the Contractor shall review and adhere to owner safety regulations specified in the contract documents.

**3.1.2.** As construction and/or normal operating activities will be ongoing throughout much of the testing program, special precaution must be taken to properly inform all personnel of tests being conducted. Barriers and caution signs shall be used in areas where potentially dangerous conditions may exist.

**3.1.3.** Only personnel who are experienced in the use of electrical test equipment shall be allowed to perform tests.

### **3.2. Lockout Procedure**

Owner will submit their electrical equipment lockout procedure to the Contractor a minimum of 72 hours prior to the start of work. The Contractor shall ensure that all personnel involved with checkout and commissioning work receive a copy and review it with their foreman.

## **4.0 GENERAL INSPECTION AND TEST PROCEDURES**

### **4.1. General**

The following general checks and tests are applicable to all equipment:

- a. Proper installation of all equipment identification nameplates has been checked.
- b. Information on equipment nameplates agrees with information on drawings, specifications, and checklists.
- c. All conduit, cable, wire and enclosures have been labeled in accordance with drawings and specifications.
- d. The suitability of all equipment and material for the area classification in which it is installed has been checked.
- e. Equipment shipping splits have been properly aligned and bolted, and torque values recorded as specified.
- f. Equipment shipping blocks and wrappings have been removed.
- g. Phase orientation is properly indicated on all buses and cables and direction of rotation is indicated on all motors.
- h. Current transformer shorting bars have been removed.
- i. Proper resistance and operation of all equipment space heaters has been checked.
- j. All equipment, cable shields, raceways, and tanks have been grounded in accordance with drawings and specifications.
- k. All equipment is undamaged and clean. Any equipment damage should be reported to the owner immediately.
- l. All damage to equipment paint or other protective coatings has been touched up.
- m. Nameplates, nametags and signs have been installed.

**4.2. Insulation Resistance**

- 4.2.1.** The insulation resistance of all wire and cable, motors, generators, transformers, switchgear, motor control equipment, and bus duct shall be checked using an insulation resistance tester (megohmmeter). Megohmmeter tests shall generally be conducted for one minute, or until readings are conclusive. If a test detects an unsatisfactory condition, corrective measures shall be taken. Another megohmmeter test shall be conducted after the corrective measures have been taken.
- 4.2.2.** The Contractor shall disconnect any solid-state devices, meters, and other equipment that could be damaged by the megohmmeter tests. Such equipment shall be reconnected after the tests are complete. No insulation shall be damaged to perform the megohmmeter tests. All connections removed to perform megohmmeter tests shall be reconnected at completion of test.
- 4.2.3.** Perform insulation-resistance test on each conductor with respect to ground and adjacent conductors. Applied potential shall be 500 volts dc for 300-volt rated cable and 1000 volts dc for 600-volt rated cable. Test duration shall be one minute. Minimum acceptable values are listed in ANSI/NETA ATS-2017, Table 100.1 & 100.14.1.
- 4.2.4.** Switchgear, motor control equipment, switchracks, bus duct, circuit breakers, panelboards, and miscellaneous electrical equipment shall be tested with a 500 V megohmmeter, phase-to-phase, and each phase-to-ground. The minimum acceptable levels shall be 1 megohm per rated kV plus 1 megohm.
- 4.2.5.** Motor and generator windings shall be megohmmeter tested phase-to-phase and phase-to-ground (all phases). On synchronous motors, field and exciter windings shall also be megohmmeter tested. Surge arrestors, surge capacitors and solid-state devices must be disconnected for this test. Generator neutral shall be ungrounded for this test. A 500 V megohmmeter shall be used for windings less than 1000 volts, and a 2500 V megohmmeter for higher voltage windings. The voltage shall be applied for one minute. 1.5 megohm is the minimum acceptable reading for motor and generator windings rated 460 volts or less. For higher voltage windings, the minimum acceptable insulation resistance (in megohms) shall be determined by the formula  $R=K(1 + kV)$ , where R is the minimum acceptable insulation resistance in megohms, kV is the voltage rating of the winding (in kV), and K is a factor depending on winding temperature, as follows:

<b>Temperature</b>	<b>K</b>	<b>Megohms @ 2300V</b>	<b>Megohms @ 4160V</b>
40°C (104°F)	1	3.3	5.2
30°C (86°F)	2	6.6	10.3
20°C (68°F)	4	13.2	20.6
10°C (50°F)	8	26.4	41.3
0°C (32°F)	16	52.8	82.6

When individual windings are tested, the minimum acceptable insulation resistance values given above shall be multiplied by 3.

- 4.2.6.** Transformer windings shall be megohmmeter tested primary to ground and secondary to ground with the neutral (Xo) ungrounded. A primary to secondary winding test shall also be performed with the neutral grounded and the positive megohmmeter lead connected to the primary windings. A 500 V megohmmeter shall be used on windings less than 1000 volts and a 2500 V megohmmeter shall be used for higher voltage windings. The voltage shall be applied for one minute. 1 megohm is the minimum acceptable resistance reading for windings rated less than 1000 volts. For higher voltage windings the insulation resistance (in megohms) shall be determined by the formula  $R = K (1 + kV)$ . R is the minimum acceptable insulation resistance in megohms, kV is the voltage rating of the winding (in kV), and K is a factor depending on winding temperature, as follows:

Temperature	K		Megohms @ 2400V		Megohms @ 4160V	
	Oil	Dry	Oil	Dry	Oil	Dry
40°C (104°F)	1	1	3.4	3.4	5.2	5.2
30°C (86°F)	2	1.5	6.8	5.1	10.3	7.7
20°C (68°F)	4	2.5	13.6	8.5	20.6	12.9
10°C (50°F)	8	5	27.2	17.0	41.3	25.8
0°C (32°F)	16	6	54.4	20.4	82.6	31.0

**4.3. High Potential Testing**

- 4.3.1.** All testing shall be done with either 1) a high-potential (Hipot) DC set or 2) a Very Low Frequency (VLF) Hipot set similar to those manufactured by Associated Research, Inc., Hill Research Co., James G. Biddle Co., or Hipotronics. VLF testing is preferred for cabling that has been previously energized.

**DC Hipot Testing**

- 4.3.2.** The basic DC high-potential test shall consist of determining, recording and plotting leakage current values for specific test voltages.
- 4.3.3.** The test shall be discontinued if there is a sudden increase in leakage current between successive voltage steps indicating insulation breakdown. Continuous plotting of test data will show such an increase in leakage current by a marked rise.
- 4.3.4.** Each incremental voltage step described in Sections 4.3.7, 4.3.10, and 4.3.11 of this Specification shall be maintained until the leakage current has stabilized, or for 5 minutes, whichever is less. If the leakage current has not stabilized in this period, the test shall be stopped and re-started. If the leakage current does not stabilize within 5 minutes the second time, the test shall be discontinued. Stabilized leakage current is obtained when the current reading does not change more than 5 microamperes in 15 seconds. Test period shall be 15 minutes as shown on ET-18-1 and 2.



- 4.3.5.** Separate tests shall be conducted on phases "A", "B", and "C".
- 4.3.6.** Line-ups of switchgear equipment shall be installed, inspected, and megohmmeter tested prior to the DC high-potential test, and shall be DC high-potential tested before connection to any cable feeders. Switchgear DC high-potential tests shall include any associated bus ducts, and shall be limited to maximum voltages as listed in 4.3.7 below.
- 4.3.7.** DC high-potential test voltages for equipment systems shall start at zero volts and gradually be increased as follows:
- a. 2000-volt increments to a maximum of 14,500 volts for nominal 5 kV rated equipment systems
  - b. 5000-volt increments to a maximum of 40,700 volts for nominal 15 kV rated equipment systems.

The maximum voltages above are established from a standard test voltage of  $1.75 \times (2E + 1000) \times 0.75$  where E is the nameplate line-to-line voltage rating of the equipment. These maximum test voltages shall be reduced to lower values if required by the equipment Vendor.

- 4.3.8.** If unsatisfactory DC high-potential test results (as described in 4.3.4 above) are obtained, the system shall be separated into components (e.g., bus duct, and switchgear) and each component DC high-potential tested separately. After correction of any deficiency, a final DC high-potential test shall be performed on the total reassembled system.
- 4.3.9.** Test data shall be recorded on ET-18-2.
- 4.3.10.** Cables rated at or above 5000V, shall be tested for current leakage using a suitable DC high-potential testing set. The initially applied DC voltage shall be not greater than three times the rated AC voltage of the cables; preferably, it shall be 2.4 times the rated voltage.

Test results shall be recorded on ET-18-1. The cable shall be gradually stressed to minimize harmful surge currents. High voltage ozone resistance, rubber type cable must be capable of withstanding the following voltage stresses:

<b>Table 100.6.1 DC Test Voltages</b>					
<b>Rated Voltage Phase-to-Phase kV</b>	<b>Conductor Size AWG or kcmil (mm)</b>	<b>Nominal Insulation Thickness mils (mm)</b>		<b>Maximum DC Field Test Voltages, kV During/After Installation</b>	
		<b>100% Insulation Level</b>	<b>133% Insulation Level</b>	<b>100% Insulation Level</b>	<b>133% Insulation Level</b>
5	8-1000 (8.4-507)	90 (2.29)	115 (2.92)	28	36
	Above 1000 (507)	140 (3.56)	140 (3.56)	28	36
8	6-1000 (13.3-507)	115 (2.92)	140 (3.56)	36	44
	Above 1000 (507)	175 (4.45)	175 (4.45)	36	44
15	2-1000 (33.6-507)	175 (4.45)	220 (5.59)	56	64
	Above 1000 (507)	220 (5.59)	220 (5.59)	56	64
25	1-2000 (42.4-1013)	260 (6.60)	320 (8.13)	80	96
28	1-2000 (42.4-1013)	280 (7.11)	345 (8.76)	84	100
35	1/0-2000 (53.5-1013)	345 (8.76)	420 (10.7)	100	124
46	4/0-2000 (107.2-1013)	445 (11.3)	580 (14.7)	132	172
69	4/0-2000 (107.2-1013)		650		195

The above shall apply to the following insulations: Rubber type (EPR), Thermoplastic (XLPE): shielded or non-shielded.

**4.3.11.** The following procedures apply for this testing:

- a. Leakage currents should be observed during voltage build-up. Faulty installations will cause leakage values to steadily rise after 30 seconds. After application of the initial voltage, the voltage shall be raised uniformly to the test voltage in not less than 10 seconds or more than 60 seconds. (The test apparatus may, however, require a slightly longer time to raise the voltage in some cases). Potheads and terminators isolated by switches, etc., from other equipment may be stressed at the test voltage along with the cable.
- b. Immediately upon reaching the test voltage, the time and current reading shall be noted and recorded on ET-18-1. The test shall be for a 15 minute duration during which current readings shall be made for the time intervals shown on ET-18-1.
- c. After the test voltage has been reached, the current readings should show a decreasing amount of current with time until a fairly steady current flows toward the end of the test time. If the current begins to increase during the test time, the cable will be considered inadequate and must be corrected or replaced. In such case, the ‘Tester in Charge’ will:
  - Notify the customer



- Where applicable, make note of the circumstances on the permit
  - Fill out the test report with applicable notes
  - Apply 'out of service' tag.
- d. If the test must be interrupted for any reason before the required test interval is complete, the cable shall be grounded for an interval at least equal to that time voltage was applied to the cable, before a new test can be started.
- e. After completing the test, the cable shall be grounded for a time interval at least equal to the amount of time voltage was applied before the cable can be considered safe.

**VLF Hipot Testing (0.1Hz)**

**4.3.12.** Refer to ANSI/ NETA ATS-2017, Section 7.3.3. Cables Medium and High Voltage.

**4.3.13.** Maximum test voltage shall not exceed the following. Consult engineer if the cable has already been in service.

<b>Table 100.6.4 Very Low Frequency Testing Levels 0.1 Hz Test Voltage (rms)</b>	
<b>System Voltage Phase-to-Phase (kV) (rms)</b>	<b>Proof Phase-to-Ground (kV) (rms)</b>
5	10
15	20
25	31
35	44

**4.3.14.** Testing time shall be 60 minutes. Reduction of testing time is permitted upon written authorization from the customer.

**4.3.15.** It is important that the KV meter is observed throughout the test. Some VLF units may not trip out in case of cable failure. Cable insulation breakdown occurs when the KV meter displays a reduced voltage. A cable fails if the test voltage collapses. In such case, the 'Tester in Charge' will:

- Notify the customer
- Where applicable, make note of the circumstances on the permit
- Fill out the test report with applicable notes
- Apply 'out of service' tag.

**4.3.16.** If the test must be interrupted for any reason before the required test interval is complete, reset timer to zero and restart the VLF test. Slowly reduce the applied voltage to zero and switch off the HV supply. The cable shall be grounded for an interval at least equal to that time voltage was applied to the cable, before a new test can be started.

**4.3.17.** After completing the test, the cable shall be grounded for a time interval at least equal to the amount of time voltage was applied before the cable can be considered safe.

#### **4.4. Vibration**

**4.4.1.** The Contractor shall monitor and record shaft and bearing bracket vibration on motors and generators provided with built-in vibration detection equipment. The levels shall be in accordance with Vendor data or equipment specifications, when run uncoupled.

**4.4.2.** Motors and generators larger than 100 hp, not equipped with built-in vibration transducers, shall be monitored with a portable vibration test device. Vibration levels shall be documented and shall be less than 1 mil peak-to-peak displacement.

**4.4.3.** Extensive vibration testing on small motors and generators less than 100 hp should be performed only if the machine appears to be running roughly.

#### **4.5. Protective Relays**

**4.5.1.** All protective relays shall be calibrated by the Contractor in accordance with manufacturer's recommendations. Relays shall be set in accordance with setpoints provided by the owner and tested at these setpoints. A separate test and calibration sheet shall be completed for each relay.

**4.5.2.** Relays with time characteristics shall be tested at two points on the time coordination curves to verify conformance with the manufacturer's data.

**4.5.3.** The Contractor shall perform primary injection tests. The Contractor shall notify and obtain the owner approval to use secondary injection testing in lieu of primary injection testing.

**4.5.4.** The Contractor shall visually check protective relaying CT's and PT's for proper polarity and ratio.

**4.5.5.** The Contractor shall clean all protective relays to remove dust, dirt and any foreign material.

#### **4.6. Electrical Equipment Insulating Oil Testing**

**4.6.1.** Insulating oil shall be sampled and tested by the Contractor in accordance with the following ASTM testing methods:

- ASTM D877, Test Method for Dielectric Breakdown of Insulating Liquids Using Disk Electrodes (Mineral Oils, Natural Oils)
- ASTM D1816, Test Method for Dielectric Breakdown Voltage of Insulating Oils From Petroleum Origin Using VDE Electrodes (Synthetic media including askarel and silicone)
- ASTM D3612, Standard Test Method for Analysis of Gases Dissolved in Electrical Insulating Oil by Gas Chromatography
- ASTM D1533, Standard Test Method for Water in Insulating Liquids by Coulometric Karl Fischer Titration
- ASTM D1500, Standard Test Method for ASTM Color of Petroleum Products (ASTM Color Scale)
- ASTM D1816, Standard Test Method for Dielectric Breakdown Voltage of Insulating Liquids Using VDE Electrodes
- ASTM D971, Standard Test Method for Interfacial Tension of Insulating Liquids Against Water by the Ring Method
- ASTM D974, Standard Test Method for Acid and Base Number by Color-Indicator Titration
- ASTM D924, Standard Test Method for Dissipation Factor (or Power Factor) and Relative Permittivity (Dielectric Constant) of Electrical Insulating Liquids
- ASTM D4052, Standard Test Method for Density, Relative Density, and API Gravity of Liquids by Digital Density Meter
- ASTM D1524, Standard Test Method for Visual Examination of Used Electrical Insulating Liquids in the Field

## 5.0 SPECIFIC INSPECTIONS AND TESTS

### 5.1 Conduit System

- 5.1.1.** During the installation of conduit, but prior to pulling wire, the following should be verified by the Contractor:
- a. Material is of the type specified, in new condition and undamaged.
  - b. Conduit is installed in a good workmanlike manner.
  - c. Field-cut conduit has been reamed and is free of burrs.
  - d. Field-made bends are smooth and the conduit sidewall is not distorted.
  - e. The conduit is properly supported and is installed with proper supports to prevent galvanic action.
  - f. Threaded joints have been made up wrench-tight or bonded.
  - g. Conduit and conduit body threads have been lubricated with an electrically conductive compound approved for the purpose.

- h. There are no excessive bends or offsets between pull points.
- i. All fittings and pull boxes are accessible.
- j. Conduit, fittings, and pull boxes are sized in accordance with the drawings.
- k. Unions are installed where necessary to allow equipment removal.
- l. Drains are installed at low points.
- m. Sealing fittings are installed as shown on the drawings and as required by the project specification and area classification drawings.
- n. Flexible conduit has been installed where required.
- o. Conduits in banks or ducts have been properly space.
- p. Conduits have been properly spaced for separation between different power levels.
- q. Conduit termination points are as shown on the drawings.
- r. Conduit bank and duct routing is per the drawings.
- s. Conduit routing does not interfere with walkways, ladders or equipment access.
- t. Conduits have been internally cleaned and unused conduits are capped.
- u. Bonding jumpers have been installed on flexible conduit and grounding bushings.

**5.1.2.** Following wiring completion (but prior to the final sign-off), the following shall also be verified by the Contractor:

- a. Exposed threads and damaged areas of PVC coated conduit have been properly touched up.
- b. Conduits have been tagged as required.
- c. All fitting covers are tightly in place.
- d. Sealing fittings have been poured in accordance with the Specifications and Section 5.1.3 below.

**5.1.3.** Conduit sealing fittings shall be poured by the Contractor after the complete electrical system has been commissioned and the owner approval is received. The Contractor shall verify that each seal has been properly poured.

- 5.1.4.** After the sealing fittings are poured, the Contractor shall mark them with red paint to indicate that the sealing compound has been poured.

**5.2. Cable Tray and Cable Support System**

- 5.2.1.** Prior to installing cable in a cable tray or cable support system, the following shall be verified by the Contractor:

- a. Cable trays and supports are of the type, material and size specified.
- b. Cable tray is properly supported on supports in a manner which will prevent galvanic action.
- c. Cable tray hardware is properly installed.
- d. The radii of cable tray fittings are as specified.
- e. Cable trays or cable supports do not interfere with walkways, ladders, or equipment access.
- f. Cable tray and cable support routing is as shown on the drawings.
- g. Cable tray is properly bonded.

- 5.2.2.** After the cable installation, the following shall be verified by the Contractor:

- a. Cable tray deflection is less than allowable maximum.
- b. Required cable tray supports and cable supports have been installed.
- c. Power cables are installed in one layer only, unless specifically shown otherwise on the drawings.
- d. Cables are individually secured to the tray at proper intervals with materials suitable for the location.

**5.3. Wire and Cable**

- 5.3.1.** The Contractor shall make the following checks during wire and cable installation:

- a. The proper type, size, color and number of wires and cables are being installed.
- b. For long pulls, the pull is performed as specified on the pulling tension calculation sheet.

- c. Cable is not pulled around too many bends.
  - d. Ambient temperature is above the minimum allowed for the cable insulation.
  - e. Proper pulling compound is being used.
  - f. For long pulls, allowable pulling tensions are not exceeded.
  - g. Cables are not bent on too tight a radius.
  - h. Wire and cable is protected and kept clean throughout the pulling operation.
  - i. Cable fill does not exceed NEC requirements.
- 5.3.2.** All wire and cable shall be megohmmeter tested by the Contractor after pulling, but prior to termination. Megohmmeter testing shall be in accordance with Section 4.2.3 of this Specification.
- 5.3.3.** Medium voltage cable shall be given a hi-pot test by the Contractor after it is pulled and stress relief is installed, but prior to termination. The hi-pot tests shall be in accordance with Section 4.3 of this Specification.
- 5.3.4.** Following conductor termination, the Contractor shall make a complete point-to-point continuity test for each conductor. The Contractor shall highlight verified terminations on the connection diagram, which in turn shall be attached to the applicable raceway, cable and wire inspection and testing record sheet. The following items shall be checked at this stage by the Contractor:
- a. Proper wire and cable tagging
  - b. Use of proper cable terminators
  - c. Proper grounding of cable shields
  - d. Properly taped terminations
  - e. Completed ET-3 ("Torque Value Record - Cable Terminators")
- 5.3.5.** The Contractor shall pour cable sealing fittings after the complete electrical system has been commissioned and owner approval received. The Contractor shall verify that each seal has been properly poured.
- 5.3.6.** After cable sealing fittings are poured, Contractor shall mark them with red paint to indicate that sealing compound has been poured.
- 5.3.7.** The Contractor shall maintain an up-to-date copy of ET-1-1, "Inspection and Testing Record - Raceway, Cable & Wire."

#### **5.4. Switchgear, Motor Control Equipment, and 480 VAC Switchracks**

Switchgear, motor control equipment, and 480 VAC Switchracks shall be checked, tested, and energized by the Contractor in accordance with the Vendor's recommendations and the following guidelines.

- 5.4.1.** Prior to feeder termination, an insulation resistance test shall be performed on all buses in accordance with Section 4.2.4 of this Specification.
- 5.4.2.** Prior to feeder termination, a hi-pot test on all medium voltage equipment buses shall be performed in accordance with Section 4.3 of this Specification.
- 5.4.3.** Protective relays shall be calibrated, set, and tested in accordance with Section 4.5 of this Specification. Tripping of circuit breakers from all associated relays shall be tested by impressing the appropriate test currents and/or voltages.
- 5.4.4.** Molded-case circuit breakers with adjustable trip settings shall be set in accordance with the drawings.
- 5.4.5.** Motor circuit protectors shall be set in accordance with the drawings. If settings are not specified, they shall be set at approximately 1000% of motor full-load current, or at the lowest setting required to start the motor. In no instance shall this setting exceed 1300% of full-load motor current.
- 5.4.6.** Thermal overload relays used for motor protection shall be individually checked to ensure that the proper heater element is installed for the motor nameplate full-load current. This setting shall not exceed 125% of full-load current for 1.15 service factor motors and motors with a marked temperature rise not exceeding 40°C, or 115% of full-load current for all other motors.
- 5.4.7.** All fuses, circuit breakers, contactors, and control power transformers shall be checked for proper rating, size, and type in accordance with the one-line diagram and approved Vendor drawing.
- 5.4.8.** Molded-case circuit breakers and motor circuit protectors shall be insulation resistance tested in accordance with Section 4.2.4 of this Specification.
- 5.4.9.** Current transformers and potential transformers shall be checked for proper rating, size, ratio, polarity, and type in accordance with the one-line diagram and approved Vendor drawings.
- 5.4.10.** Space heaters shall be checked for proper operation.
- 5.4.11.** A complete functional check shall be performed. It shall include, but not be limited to, interlocks, automatic transfer schemes, and circuit breaker and contactor operation from all associated control devices.

- 5.4.12. Low voltage drawout air circuit breakers shall be inspected and tested in accordance with ET-8-1,2, "Inspection and Testing Checklist - Low Voltage Drawout Air Circuit Breakers." An up-to-date copy of this form for each breaker shall be maintained.
- 5.4.13. Medium voltage circuit breakers shall be inspected and tested in accordance with ET-9-1,2, "Inspection and Testing Checklist - Medium Voltage Circuit Breakers." An up-to-date copy of this form for each breaker shall be maintained.
- 5.4.14. Prior to energizing any switchgear or motor control equipment, perform a final megohmmeter test of the switchgear or motor control center buses. Care should be taken to disconnect lightning arrestors, capacitors, potential transformers, and secondary ground connections on current transformers, as necessary.
- 5.4.15. Maintain an up-to-date copy of ET-7-1,2,3,4, "Inspection and Testing Checklist - Switchgear, Motor Control Equipment, and 480 VAC Switchracks."

## 5.5. Transformers

Transformers shall be checked, tested and energized by the Contractor in accordance with the Vendor's instructions and the following guideline.

- 5.5.1. Prior to feeder termination, transformers shall be given an insulation resistance test in accordance with Section 4.2.6 of this Specification.
- 5.5.2. Liquid-immersed transformers shall be visually inspected for leakage of liquid at fittings, bushings and other externally connected or gasketed devices (e.g., oil temperature and level gages).
- 5.5.3. Control and protective equipment on transformers, (e.g., shutdown and alarm devices and forced-air cooling facilities) shall be checked for proper operation.
- 5.5.4. On power transformers, tap changers shall be manually operated and set at the proper tap setting prior to energizing the transformer. The turns ratio shall be measured for each tap setting and compared to nameplate data. Measured values shall not deviate from nameplate values by more than 0.5%.
- 5.5.5. Where liquid-immersed transformers have been shipped by the manufacturer completely assembled, filled and factory tested, tanks shall not be opened for internal inspections unless specific conditions indicate otherwise.
- 5.5.6. Verify that liquid level, temperature, and pressure are within acceptable limits prior to energizing a liquid-immersed transformer.
- 5.5.7. A dielectric breakdown test shall be conducted on a sample of each liquid-immersed transformer's insulating fluid. The test shall be in accordance with Section 4.6.1 of this Specification. Breakdown shall not be below the Vendor's recommended minimum, and in no instance less than 25 kV.



- 5.5.8. If current transformers or lightning arrestors are installed, they shall be checked for correct sizing.
- 5.5.9. Just prior to energizing a transformer, the entire system (including primary and secondary feeders) shall be given an insulation resistance test.
- 5.5.10. After a transformer is initially energized, it shall be monitored closely for proper operation. After approximately one week of continuous operation, a sample of insulating fluid from liquid-filled transformers shall be given dielectric breakdown test in accordance with Section 4.6.1. of this Specification.
- 5.5.11. Maintain an up-to-date copy of ET-10-1,2, "Inspection and Testing Checklist - Transformers."

## 5.6. Bus Duct

Bus duct shall be checked and tested by the Contractor in accordance with the Vendor's instructions and the following guidelines.

- 5.6.1. Verify that all lap joints are properly cleaned and greased in accordance with the Vendor's instructions prior to splices being made.
- 5.6.2. Verify that bus duct is properly supported in accordance with the drawings and specifications.
- 5.6.3. Verify that bus splices have been properly torqued per Vendor recommendations.
- 5.6.4. All drains and breathers shall be checked for cleanliness.
- 5.6.5. Ensure that removable insulation boots are properly installed after splices are made. The integrity of the bus insulation shall be visually checked.
- 5.6.6. Bus duct shall be given an insulation resistance test in accordance with Section 4.2.4 of this Specification.
- 5.6.7. Medium voltage bus duct shall be given a hi-pot test in accordance with Section 4.3 of this Specification.
- 5.6.8. Space heaters shall be checked for proper operations.
- 5.6.9. Ensure that all covers have been properly installed prior to energizing the bus duct.
- 5.6.10. Maintain an up-to-date copy of ET-12-1,2, "Inspection and Testing Checklist - Bus Duct."

### **5.7. Uninterruptible Power Supply (UPS)**

UPS systems shall be checked, tested, and energized by Contractor in accordance with the Vendor's instructions and the following guidelines.

**5.7.1.** Check out and test the battery charger and battery in accordance with Section 5.8 of this Specification.

**5.7.2.** All alarms and shutdowns, including but not limited to the following, shall be tested:

- a. Simulation of inverter failure and operation of the transfer switch without loss of load.
- b. Retransfer of full load to the inverter without loss of load.
- c. Simulation of an AC power failure to the battery charger and DC power from the charger.
- d. Simulation of a battery failure where facilities are provided to enable successful inverter operation under this condition.
- e. Energization of the single largest inductive load or combination of loads which may be energized simultaneously without loss of other operating loads.

### **5.8. Battery and Battery Charger**

Batteries and battery chargers shall be checked, tested and energized by Contractor in accordance with the Vendor's instructions and the following guidelines.

**5.8.1.** Prior to introducing electrolyte into battery cells, the cells shall be visually inspected for cracks and other damage. In addition, verify that the electrolyte in the containers is properly mixed (i.e., the electrolyte at the bottom of the container does not have a higher specific gravity than the electrolyte at the top).

**5.8.2.** After all cells have been filled, but before the charger is energized, a specific gravity and voltage reading shall be taken and recorded for each cell.

**5.8.3.** The battery charger shall then be energized in the float mode. Voltage readings shall be taken across the battery and at the charger. Float voltage should then be set in accordance with manufacturer's instructions. If applicable, the charger shall then be placed in the equalize mode and the same procedure followed.

**5.8.4.** The battery shall be completely charged with the charger in either the float or equalize mode, as recommended by the manufacturer. Specific gravity and voltage readings shall be taken for each cell and recorded on ET-13-1,2,3,4, "Inspection and Testing Record -

Battery and Battery Charger." Values shall be within the Vendor tolerances. Cell temperature shall be checked daily during initial charging to ensure that the Vendor's recommended maximum is not exceeded.

- 5.8.5. After the battery has been completely charged, it shall be given a discharge test in accordance with the Vendor's instructions. (Nickel-cadmium batteries shall be deep-cycled twice prior to performing this test.) With the total load on the system, the charger shall be turned off. The battery voltage and load amperage shall be recorded every 30 minutes. When the battery reaches the minimum allowable voltage as specified by the Vendor, the charger shall be turned back on and the battery recharged. After the cells have been fully recharged, voltage and specific gravity readings shall be taken and recorded.
- 5.8.6. All battery charger alarms shall be verified for proper operation and setpoints.
- 5.8.7. After testing is complete, the battery charger shall be left operating in the float mode. Contractor shall maintain battery systems until all electrical facilities have been accepted by the owner.
- 5.8.8. Never use the same hydrometer, thermometer or any other test equipment for both lead-acid and nickel-cadmium batteries. Separate equipment shall be used.
- 5.8.9. Maintain an up-to-date copy of ET-13-1,2,3,4, "Inspection and Testing Record - Battery and Battery Charger."

## 5.9. Panelboards

- 5.9.1. The contractor shall verify that the types, ratings, and sizes of panelboards are as shown on the drawings.
- 5.9.2. The Contractor shall verify that circuit breakers are sized in accordance with the drawings.
- 5.9.3. Color coding of all conductors shall be verified by the Contractor.
- 5.9.4. Prior to energizing panelboards, the Contractor shall perform insulation resistance tests on panelboards including incoming feeders.
- 5.9.5. The Contractor shall verify that each circuit serves the proper load.
- 5.9.6. The Contractor shall test all GFCI-type breakers.
- 5.9.7. After completing the above checks, the Contractor shall verify that the panelboard circuit schedule is properly filled out and in place in the panelboard.
- 5.9.8. The Contractor shall maintain an up-to-date copy of ET-14, "Inspection and Testing Checklist - Panelboards."

## 5.10. Grounding

**5.10.1.** The Contractor shall verify that the grounding systems are in accordance with the drawings and specifications, and the National Electrical Code. System and equipment grounding conductors shall be verified for proper sizing and color coding. Mechanical bonding connections shall be checked for tightness.

**5.10.2.** The following grounding system tests shall be performed by the Contractor where a grounding loop is installed.

**Grounding Loop.** The resistance of individual ground rods shall be checked prior to connection into the overall grounding system. If the resistance of any rod is greater than 5 ohms, another rod shall be installed in parallel, the rod shall be extended and driven deeper, or other means which are acceptable to the owner shall be utilized to decrease resistance.

Resistance of the grounding loop shall be measured to earth at several points, and reading shall be recorded. Where a metallic conduit system serves as the equipment ground path, resistance from conduit to earth shall be measured and recorded. Resistance of the ground system to earth shall in no case be greater than 1 ohm.

**Equipment Grounds.** Resistance between the grounding loop (or metallic conduit) and the following grounding points shall be measured and recorded.

- a. Electrical equipment enclosures
- b. Nonelectrical equipment (e.g., vessels, tanks, and fences)
- c. Lightning protection equipment
- d. Wiring support systems (e.g., conduit and cable tray)
- e. Armors and sheaths of cables

In no case shall the total resistance to ground (i.e., equipment to ground loop plus ground loop to earth) exceed 1 ohm.

**System Grounds.** Resistance between the grounding loop and system neutrals, at the point of grounding, shall be measured and recorded. In no case shall the total resistance to ground (i.e., neutral to ground loop plus ground loop to earth), be greater than the value of the grounding resistor (if any) plus 1 ohm.

**5.10.3.** The following grounding system tests shall be performed by the Contractor where a steel structure is used as the grounding electrode (e.g., offshore platforms).

**Equipment Grounds.** Resistance between the platform's structural steel and the following grounding points shall be measured and recorded. In no case shall the resistance exceed 1 ohm.

- a. Electrical equipment
- b. Nonelectrical equipment (e.g., vessels, tanks, and fences)
- c. Lightning protection equipment
- d. Wiring support systems (e.g., conduit and cable tray)
- e. Armors and sheaths of cables

**System Grounds.** Resistance between the platform's structural steel and system neutrals, at the point of grounding, shall be measured and recorded. In no case shall the measured resistance be greater than the value of the grounding resistor (if any).

**5.10.4.** The Contractor shall maintain an up-to-date copy of ET-15-1,2,3, "Inspection and Testing Record - Grounding System".

## **5.11. Grounding Resistors**

**5.11.1.** With the resistor disconnected from the neutral, the cold resistance shall be measured and recorded by the Contractor. Variable resistors shall be set by the Contractor in accordance with the Manufacturer's/Owner's drawings.

**5.11.2.** Grounding resistors shall be megohmmeter tested by the Contractor with a 500-volt insulation tester, in accordance with Section 4.2 of this Specification. The resistor shall be disconnected from ground for this test.

**5.11.3.** Medium voltage grounding resistors shall be given a DC hi-pot test by the Contractor in accordance with Section 4.3 of this Specification. The resistor shall be disconnected from ground for this test.

**5.11.4.** Pulsing equipment on high-resistance grounding systems shall be functionally tested by the Contractor for proper operation per Vendor instructions.

**5.11.5.** The Contractor shall maintain an up-to-date copy of ET-16, "Inspection and Testing Record - Grounding Resistors".

## 5.12. Motors and Motor Control

### Motors - Mechanical Inspection

- 5.12.1. The Contractor shall inspect the motor frame, end bells, and shaft extensions for mechanical damage.
- 5.12.2. On motors with grease-lubricated bearings, the Contractor shall verify that bearings are adequately (but not excessively) greased. This requirement does not apply to motors with sealed bearings.
- 5.12.3. The Contractor shall verify that all motors are suitable for the area classification.
- 5.12.4. On motors with oil-lubricated bearings, the Contractor shall verify that oil rings rotate freely and that the reservoir is filled with oil recommended by the Vendor. For motors with forced oil lubrication, verify that oil piping is complete and that the lube-oil system has been cleaned and checked out.
- 5.12.5. The Contractor shall properly align the motor to the driven equipment, using the reverse dial alignment procedure unless specified otherwise. Do not install the coupling until the uncoupled run test has been completed. On motors with sleeve bearings, verify that limited end-float couplings have been supplied. Verify that the motor rotor turns easily by hand and that there is no friction or binding.
- 5.12.6. The Contractor shall verify that the motor is properly anchored and that all bolts are properly torqued.
- 5.12.7. The Contractor shall verify that any specified air filters or screen are installed.
- 5.12.8. The Contractor shall verify that enclosure seals and gaskets are intact.

### Motors - Electrical Inspection

- 5.12.9. The Contractor shall perform an insulation resistance test on motor windings in accordance with Section 4.2.5 of this Specification.
- 5.12.10. The Contractor shall verify that each motor is properly terminated and grounded. The Contractor shall ensure that surge arrestors and surge capacitors are properly grounded.
- 5.12.11. The Contractor shall, on insulated bearings, verify the insulation level with a volt-ohmmeter set on the highest resistance scale. **Do not** use a megohmmeter for this test. The minimum acceptable reading is 100K ohms. If a reading below 100K ohms is obtained, and the oil rings are not providing a ground path, notify the owner.
- 5.12.12. The Contractor shall verify that motor differential current transformers and ammeter current transformers, if provided, are properly wired. Ensure that current transformer secondaries are not open-circuited.

**5.12.13.** The Contractor shall verify that motor accessories (e.g., space heaters, vibration switches, thermocouples, RTDs, and air filter differential pressure switches) are properly wired, operational, and suitable for the area classification.

**5.12.14.** The Contractor shall check motor RTDs to ensure they are of the type specified on the drawings.

#### **Motor Control - Inspection and Testing**

**5.12.15.** Motor control equipment shall be inspected and tested by the Contractor in accordance with Section 5.4 of this Specification and the following guidelines.

**5.12.16.** Verify the proper operation of all control stations.

**5.12.17.** Perform a complete functional test of motor control circuits with the motor leads disconnected from the starter. All starting, alarm and shutdown functions shall be tested. At completion of the functional test, any disconnected wiring shall be reconnected.

#### **Motors - Running Tests**

**5.12.18.** The Contractor shall verify that motors rotate in the proper direction.

**5.12.19.** Where feasible, the Contractor shall run motors uncoupled from their driven equipment for 30 minutes or until bearing temperatures have stabilized, whichever is longer. All motor alarm and shutdown circuits shall be activated during running tests. Only shutdowns related to motor protection should be activated during motor run-in testing. Process-related shutdowns must be bypassed.

**5.12.20.** Motor running currents shall be recorded by the Contractor.

**5.12.21.** Motor vibration shall be monitored by the Contractor in accordance with Section 4.4 of this Specification.

**5.12.22.** The Contractor shall check for abnormal temperature rise in motor bearings. If equipped, RTDs or thermocouple readouts shall be monitored. Bearing temperatures shall not exceed the Vendor's recommended levels or 180°F, whichever is less.

**5.12.23.** If equipped with RTDs or thermocouple readouts, the Contractor shall check for abnormal temperature rise in motor windings and the readouts shall be monitored.

**5.12.24.** On oil-lubricated motors, the Contractor shall verify that oil rings are rotating properly. Check that reservoir oil level falls slightly when motor is started and rises again when motor is stopped.

**5.12.25.** On motors supplied with a forced lube-oil system, the Contractor shall verify proper flow, temperature and pressure of the lube-oil.

- 5.12.26.** Following satisfactory completion of the uncoupled motor run test, the Contractor shall couple the motor to its driven equipment and run motor until all temperatures have stabilized, but not less than 4 hours. All checks and tests performed during the motor uncoupled run test shall be repeated for the coupled run test. Caution, do not run pumps without fluid.
- 5.12.27.** The Contractor shall maintain an up-to-date copy of ET-17-1,2,3, "Inspection and Testing Record - Squirrel Cage Induction Motors." With minor additions, this form may also be used for other types of machines.
- 5.12.28.** Should a small motor need to be disassembled for inspection, the Contractor shall notify the owner. Assistance from the Vendor shall be requested by the owner as required.

### **5.13. Generators**

Power generation equipment shall be inspected and tested by the Contractor in accordance with Vendor's instructions. As a minimum, the following inspections and tests shall be performed.

- 5.13.1.** A complete visual inspection shall be performed to verify that all equipment and devices are properly installed, valves and switches are in their proper position, shipping restraints and covers have been removed, wire and cable terminations are tight, the unit is clean, and anything else necessary for the equipment to run is in its proper operating mode.
- 5.13.2.** The generator windings shall be megohmmeter tested in accordance with Section 4.2.6 of this Specification.
- 5.13.3.** The generator shall be properly aligned to its driver using the reverse dial alignment method unless otherwise specified.
- 5.13.4.** The insulation level of insulated bearings shall be verified using a volt-ohmmeter, set on highest resistance scale. **Do not** use a megohmmeter. Ensure that oil rings are centered and that the generator is uncoupled. If the reading is below 100K ohms, notify the owner.
- 5.13.5.** Prior to startup, a complete functional test shall be made on all generator controls. Auxiliary equipment such as fans, lube-oil pumps and coolers, shall all be run as part of the functional test. Alarm and shutdown circuits shall be functionally tested for proper operation.
- 5.13.6.** Generators shall be given a complete four-hour full load test run, when at least 40% of full load is available. Generators shall be started up unloaded. Loads shall be added gradually. Vibration shall be monitored under all load conditions in accordance with Section 4.4 of this Specification. After it has been determined that a generator is operating satisfactorily, it shall be step loaded and unloaded with the largest single load it is expected to carry during normal operation. Proper voltage and frequency response shall be verified.



- 5.13.7. Where generators are designed to operate in parallel, or in parallel with the utility, they shall be tested in this mode over as wide a load range as is available. Proper operation of the governor and voltage regulator shall be verified. Where a generator is connected to a utility system through a critical-load bus (so that either power supply will pick up the entire critical load in case the other fails) operation under both modes of failure shall be checked.
- 5.13.8. Where a standby power system includes automatic start of the generator and automatic transfer of the loads to the generator, the generator and automatic transfer system shall be checked for proper operation on both failure and restoration of normal power.
- 5.13.9. The Contractor shall maintain an up-to-date copy of ET-19, "Inspection and Testing Checklist - Electric Generators." In addition, the Contractor shall develop and maintain a complete running log for all generators.

#### **5.14. Programmable Controllers**

Programmable controllers shall be checked by the Contractor in accordance with the Vendor's instructions and instructions from the owner. As a minimum, power requirements, proper field wiring, and the interface between PC and end devices shall be verified. Additional checks are not within the scope of this Specification.

#### **5.15. Lighting**

- 5.15.1. Lighting fixtures shall be individually inspected by the Contractor to verify that the proper type and wattage fixture is installed in accordance with the drawings. Proper labeling for the area classification in which it is installed shall be verified.
- 5.15.2. The Contractor shall verify that each fixture is installed in the location and at the height shown on the drawings.
- 5.15.3. Fixtures shall be energized by Contractor one circuit at a time, ensuring that each one is served from the proper circuit. The Contractor shall record actual lighting circuit operating currents on the appropriate panel schedule drawing.
- 5.15.4. The proper operation of photocells, switches, motion detectors, lighting contactors, and other control devices shall be verified by the Contractor and noted on ET-14.
- 5.15.5. After each fixture or device is inspected and tested by the Contractor, the appropriate lighting drawing should be highlighted.
- 5.15.6. The Contractor shall perform a night test of both the normal and emergency lighting systems. Fixtures shall be reoriented and adjusted as needed, to properly illuminate the intended areas and equipment. Illumination levels shall be recorded on the lighting plans which shall be submitted to the owner for review.

#### **5.16. Receptacles**

- 5.16.1.** Receptacles shall be energized one circuit at a time by the Contractor to ensure that each one is served from the proper circuit. Each receptacle shall be checked for proper voltage, polarity and grounding. GFCI-type receptacles shall be tested for proper operation.
- 5.16.2.** Three-phase receptacles (e.g., welding receptacles) shall be checked by the Contractor for common phasing (i.e., all receptacles phased alike) and proper voltage.
- 5.16.3.** After each receptacle is inspected and tested by the Contractor, the appropriate drawing shall be highlighted.

#### **5.17. Communication and Alarm Systems**

Communication and alarm systems shall be inspected and tested by the Contractor in accordance with the Vendor's instructions. As a minimum, each system shall be given an operational test. Each device shall be individually tested and adjusted as necessary.

#### **5.18. Aids to Navigation**

Aids to navigation shall be inspected and tested by the Contractor in accordance with the Vendor's instructions. As a minimum, each device shall be given a complete operational test.

#### **5.19. Lightning Protection**

- 5.19.1.** The lightning protection system shall be visually inspected by the Contractor to verify that it conforms with the drawings. Connections at air terminals and ground rods shall be checked for tightness. Air gaps shall be checked for contamination.
- 5.19.2.** Resistance measurements shall be taken and recorded in accordance with Sections 5.10.2 and 5.10.3 of this Specification.

#### **5.20. Heat Tracing**

- 5.20.1.** Electric heat trace cable and pad heaters shall be continuity tested and given a megohmmeter test by the Contractor in accordance with Section 4.2.3 of this Specification, prior to installation, following installation but prior to insulation, and following insulation.
- 5.20.2.** The Contractor shall ensure that the heat tracing system is suitable for the area classification.
- 5.20.3.** A visual inspection shall be made by the Contractor of the heat trace system prior to pipe and equipment insulation. Each heater shall be checked for type and wattage and verified to ensure that each system conforms to the drawings. Each thermostat (if provided) shall be checked for type and range and compared to the drawings.

- 5.20.4. Thermostat setpoints (if required) shall be set in accordance with the drawings. Each heater shall be energized, with starting and running currents recorded by the Contractor. Thermostat operation (if required) shall be verified by adjusting the setpoint.
- 5.20.5. Individual monitor panels (if provided) shall be completely tested by the Contractor.
- 5.20.6. Following installation of pipe and equipment insulation, each heater shall be checked again for proper operation by the Contractor. Pipe and equipment shall be inspected to insure that proper caution signs are installed in accordance with the Specifications.
- 5.20.7. The Contractor shall maintain an up-to-date copy of ET-20, "Inspection and Testing Record - Heat Tracing."

### 5.21. Miscellaneous Electrical Equipment

Equipment not specifically listed above, shall be inspected and tested in accordance with Vendor's instructions and direction from the owner. Miscellaneous equipment includes, disconnect switches, motor-operated valves, and HVAC equipment. It is the intent of this Specification that the Contractor completely inspect, test and start up all equipment shown on the electrical drawings and other miscellaneous equipment normally associated with the electrical portion of a facility.

## 6.0 TESTING FORMS

- 6.1. The attached forms, listed as follows, shall be used by the Contractor when performing inspections and tests and for recording test results.

ET-1-1	Inspection and Testing Record – Raceway, Wire and Cable
ET-1-2	Inspection Checklist – Conduit
ET-1-3	Inspection Checklist – Cable Tray and Cable Supports
ET-1-4	Inspection and Testing Checklist – Cable and Wire
ET-2-1,2	Torque Value Record – Electrical Equipment
ET-3	Torque Value Record – Cable Terminations
ET-4-1	Insulation Resistance Record – Electrical Equipment
ET-4-2	Insulation Resistance Record – Power Cable
ET-5	Insulation Resistance Record – Rotating Electric Machinery
ET-6	Insulation Resistance Record – Transformers
ET-7-1,2,3,4	Inspection and Testing Checklist – Switchgear and Motor Control Equipment, 480VAC Switchrack
ET-8-1,2	Inspection and Testing Checklist – Low Voltage Drawout Air Circuit Breakers
ET-9-1	Inspection and Testing Checklist – Medium Voltage Circuit Breakers
ET-10-1,2	Inspection and Testing Checklist – Transformers
ET-11	Testing Record – Electrical Equipment Insulating Oil
ET-12-1,2	Inspection and Testing Checklist – Bus Duct
ET-13-1,2,3,4	Inspection and Testing Record – Battery and Battery Charger
ET-14	Inspection and Testing Record – Panelboards
ET-15-1,2,3	Inspection and Testing Record – Grounding
ET-16	Inspection and Testing Checklist – Neutral Grounding Resistor

ET-17-1,2,3	Inspection and Testing Checklist – Squirrel Cage Induction Motors
ET-18-1	Medium Voltage Cable – DC High Potential Test
ET-18-2	Medium Voltage Equipment – DC High Potential Test
ET-19	Inspection and Testing Checklist – Electrical Generator
ET-20	Inspection and Testing Record – Heat Tracing
ET-21	Tabulation of Equipment Requiring Vendor Assistance for Startup
ET-22	CT, PT, Protective Relay Calibration
ET-23	Punch list

Inspection and Testing Record  
Raceway, Wire and Cable

ET-1-1

System # \_\_\_\_\_ System

1 Conduit or Cable ID	2 Raceway Complete O.K. to Pull Wire/Cable		3 Wire Pull Complete O.K. to Terminate Wire/Cable		4 Wire & Cable Contin'ty Test Complete		5 Commiss'g Complete O.K. to Pour Seals		6 Raceway, Wire & Cable Complete		7 Punchlist Attached		8 Punchlist Complete	
	Cr*	O**	Cr*	O**	Cr*	O**	Cr*	O**	Cr*	O**	Cr*	O**	Cr*	O**

\* Contractor Initials  
\*\* Owner Initials

Contractor \_\_\_\_\_ Date \_\_\_\_\_

Owner \_\_\_\_\_ Date \_\_\_\_\_

I. During installation of conduit and prior to pulling of wire, the following items shall be verified. After a conduit has been inspected and is deemed to be ready for wire pulling, Contractor and Company field representatives shall initial the appropriate entry in Column 2 of ET-1-1.

1. Material is new and undamaged.
2. Conduit has been installed in a good workmanlike manner.
3. Conduit is free of burrs.
4. Conduit is properly supported.
5. Threaded joints have been made up wrench tight.
6. Conduit and conduit body threads have been greased with an electrically conductive grease.
7. There are not excessive bends or offsets between pull points.
8. Fittings and pull boxes are accessible for wire pulling.
9. Conduit, fittings, and pull boxes are sized per the drawings.
10. Unions are installed, where necessary, to allow equipment removal.
11. Drains are installed at conduit low points.
12. Seal fittings are installed as required.
13. Flexible conduit is installed as required.
14. Insulated bushings are installed in conduit hubs.
15. Bonding jumpers are installed on flex conduit and grounding bushings.
16. Conduits are properly spaced.
17. Conduit routing and end points are in accordance with the drawings.
18. Conduit does not interfere with accessways or other equipment.
19. Conduit has been internally cleaned and capped.
20. Field made bends are smooth and conduit is not distorted.
21. Explosion proof fittings are used where area classification changes.
22. Conduits are properly spaced to provide proper separation between power levels.
23. Conduits are properly supported to prevent galvanic action.

II. Following completion of all installation and testing, but prior to final acceptance of a circuit, the following additional items shall be verified.

1. Exposed threads and damaged areas of PVC coated conduit have been properly touched up.
2. Conduits are tagged as required.
3. Fitting covers are tightly in place
4. Seals have been poured and painted red.
5. Seal fitting plugs can be removed.

- I. During installation of cable tray and cable supports and prior to pulling of cable, the following items shall be verified. After a tray or support system has been inspected and deemed ready for cable pulling, Contractor and Company field representatives shall initial the appropriate entries in Column 2 of ET-1-1.
1. Cable tray or support is of the type, material, and size specified.
  2. Cable tray is properly supported.
  3. Cable tray hardware is properly installed.
  4. The radius of cable tray fittings is not smaller than specified.
  5. Cable trays or cable supports do not interfere with accessways or other equipment.
  6. Cable tray and cable support routing is as shown on the drawings.
  7. Cable tray is properly bonded.
  8. Cables are properly spaced to provide proper separation between power levels.
- II. Following completion of cable installation, but prior to final acceptance of a circuit, the following additional items shall be verified.
1. Cable tray deflection is below the allowable maximum.
  2. Required additional cable tray supports and cable supports have been installed.
  3. Cables are installed in one layer only unless specifically shown otherwise on the drawings.
  4. Cable fill does not exceed NEC requirements.

- I. During wire and cable pulling operations, the following items shall be verified.
  1. The proper type, color and number of wires and cables are being pulled.
  2. For large and/or long pulls, the pull is set-up as specified on the pulling tension calculation sheet.
  3. Ambient temperature is above minimum allowable.
  4. Proper pulling compound is being used.
  5. For large and/or long pulls, allowable pulling tensions are not exceeded.
  6. Large cables are not bent on too tight a radius.
  7. Wire and cable is protected throughout the pulling operation.
  8. Cable is not pulled around too many bends.
  
- II. Following wire and cable installation, but prior to termination, the following inspections and tests shall be made. After it is deemed that a cable or wire in a conduit is ready for termination, OWNER and Contractor field representatives shall initial and appropriate entry in Column 3 of ET-1-1.
  1. Verify that the proper type, size, color and number of wires and cable have been pulled.
  2. Visually inspect the conductors for damage.
  3. Verify that cables in tray are properly spaced and neatly Ty-Rapped.
  4. Verify that cable seal fittings are installed as required.
  5. Wire and cable shall be meggered in accordance with the specifications.
  6. Medium voltage cable shall be given a hi-pot test in accordance with the specifications and test results noted on ET-18-1 attached to ET-1-1.
  
- III. Following conductor termination, a complete point-to-point continuity test shall be made for each conductor. Verified terminations shall be highlighted on the connection diagrams which in turn shall be attached to ET-1-1. The appropriate entry in Column 4 of ET-1-1 shall be initialled by OWNER and Contractor field representatives. The following items shall be verified as part of the continuity test.
  1. Proper wire and cable tagging.
  2. Use of proper cable terminators.
  3. Cable shields are properly grounded.
  4. Taped terminations are properly made up.
  5. Cable terminators have been properly torqued and torque values recorded on ET-3, which shall be attached to ET-1-1.
  
- IV. Following completion of all installation and testing, but prior to acceptance of a circuit, the following additional items shall be verified.
  1. Final dressing of wires and cables is complete.
  2. Cable seals have been poured and painted red
  3. Seal fitting plugs can be removed.



Torque Value Record Electrical Equipment						ET-2-1
System # _____			System _____			
Equipment Tag # _____			Equipment _____			
Section No.	Bolt Size	Vendor Spec. (Ft-Pounds)	US Standard (Ft-Pounds)	Torque (Ft-Pounds)	Initials/Date	
					Contr.	Owner

Remarks:

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Contractor \_\_\_\_\_ Date \_\_\_\_\_

Owner \_\_\_\_\_ Date \_\_\_\_\_

Torque Value Record Electrical Equipment					ET-2-2
U.S. Standard <u>BOLT TORQUES FOR BUS CONNECTIONS</u> <u>Heat Treated Steel</u>					
	SAE	SAE	SAE	SAE	SAE
Grade	1&2	5	6	8	
Bolt Head Marking					
Minimum Tensile (P.S.I.)	64K	105K	133K	150K	
Torque (Foot Pounds)					
Bolt Diameter					
1/4	5	7	10	10.5	
5/16	9	14	19	22	
3/8	15	25	34	37	
7/16	24	40	55	60	
1/2	37	60	85	92	
9/16	53	88	120	132	
5/8	74	120	167	180	
3/4	120	200	280	296	
7/8	190	302	440	473	
1.0	282	466	660	714	

Note: Reduce torque by 20% when cadmium-plated bolts are used.

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Torque Value Record Cable Terminators		ET-3
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System # \_\_\_\_\_ System \_\_\_\_\_

Circuit/Wire Number	Conductor Size (AWG/MCM)	Screw/Bolt Size	Vendor Specification (in-lb or ft-lb)	UL Standard (in-lb or ft-lb)	Torque (in-lb or ft-lb)	Initials/Date	
						Contr.	Owner

Remarks:

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Contractor \_\_\_\_\_ Date \_\_\_\_\_

Owner \_\_\_\_\_ Date \_\_\_\_\_

References: For standard terminator torque requirements reference Article 110-14 of the NEC handbook or UL Standards 486A, B, C, D, E.

Insulation Resistance Record Electrical Equipment		ET-4-1
--	--	--------

System # \_\_\_\_\_ System \_\_\_\_\_

Equipment	Rated Voltage	Test Voltage	Insulation Resistance (megohms)						Initials/Date	
			A-G*	B-G*	C-G*	A-B	B-C	A-C	Contr.	Owner

\* Ground

Remarks: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Contractor \_\_\_\_\_ Date \_\_\_\_\_

Owner \_\_\_\_\_ Date \_\_\_\_\_

System # \_\_\_\_\_ System \_\_\_\_\_

Cable/or Circuit No.	Cable Size	Rated Voltage	Test Voltage	Insulation Resistance (megohms)						Initials/Date	
				A-G*	B-G*	C-G*	A-B	B-C	A-C	Contr.	Owner

\* Ground

Remarks: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Contractor \_\_\_\_\_ Date \_\_\_\_\_  
 Owner \_\_\_\_\_ Date \_\_\_\_\_

Insulation Resistance Record Rotating Electric Machinery										ET-5	
System # _____							System _____				
Equipment	Rated Voltage	Test Voltage	Temp.	Insulation Resistance (megohms)						Initials/Date	
				A-G*	B-G*	C-G*	A-B	B-C	A-C	Contr.	Owner

\* Ground

Notes:

1. Use a 500V test set for equipment rated less than 1,000 V. Use a 2,500 V test set for equipment rate 1,000 V and higher.
2. Test voltages are to be applied for 1 minute.
3. Test each phase separately wherever possible; otherwise, tie all three phases together and test to ground.
4. On synchronous machines, field and exciter windings shall also be tested.
5. Minimum acceptable insulation resistance is 1 megohm for windings rated 460 V and less. For higher voltage windings, see Section 4.2.5 of the Specifications.

Remarks:

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

Contractor \_\_\_\_\_ Date \_\_\_\_\_  
 Owner \_\_\_\_\_ Date \_\_\_\_\_

System # \_\_\_\_\_ System \_\_\_\_\_  
 Equipment Tag No. \_\_\_\_\_ Equipment \_\_\_\_\_ Rating (KVA) \_\_\_\_\_ Voltage \_\_\_\_\_

**INSULATION RESISTANCE TO GROUND**

Winding voltage _____ Test voltage _____ Temperature _____ H1 to ground _____ H2 to ground _____ H3 to ground _____ Minimum allowable _____	Winding voltage _____ Test voltage _____ Temperature _____ X0 to ground _____ X1 to ground _____ X2 to ground _____ X3 to ground _____ Minimum allowable _____
---	---

**INSULATION RESISTANCE BETWEEN WINDINGS**

Primary winding voltage \_\_\_\_\_  
 Test voltage \_\_\_\_\_  
 Temperature \_\_\_\_\_  
 H1 to X1 \_\_\_\_\_  
 H2 to X2 \_\_\_\_\_  
 H3 to X3 \_\_\_\_\_  
 Minimum allowable \_\_\_\_\_

Notes:

1. Use a 500V test set for transformer windings rated less than 1,000V. Use 2,500V test set for equipment rated 1,000V and higher.
2. Test voltage is to be applied for 1 minute.
3. Record temperature of insulating liquid for liquid-immersed transformers and surrounding air temperature for dry-type transformers.
4. Testing to ground shall be done with Xo ungrounded. Winding to winding testing shall be done with Xo grounded and the potential applied on the primary winding.
5. Minimum acceptable insulation resistance shall be 1 megohm for windings rated less than 1,000V. For higher voltage windings, minimum allowable insulation resistance shall be in accordance with Section 4.2.6 of the Specification. In no case shall the insulation resistance be less than recommended by the manufacturer.

Remarks:

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Contractor \_\_\_\_\_ Date \_\_\_\_\_  
 Owner \_\_\_\_\_ Date \_\_\_\_\_

<b>Inspection and Testing Checklist Switchgear and Motor Control Equipment</b>		<b>ET-7-1</b>
<p>System # _____ System _____</p> <p>Equip. Tag # _____ Equipment _____</p> <p>Mfg. _____ Type/Model _____</p> <p>Voltage _____ Frequency _____</p> <p>Rating (A) _____ Phase/Wire _____</p>		
<p>UL Labelling/Area Classification _____</p> <p>Fault Rating (kA/MVA) _____</p>	<b>Initials/Date</b>	
<ol style="list-style-type: none"> <li>1. Verify nameplate data agrees with information shown above.   Nameplate Data: Tag _____ Main Bus Rating (A) _____  Voltage _____ Fault Rating (kA/MVA) _____  Phase/Wire _____  Frequency _____  UL Labelling/Area Classification _____</li> <li>2. Verify that installation location and orientation is in accordance with the drawings.</li> <li>3. Shipping supports and covers have been removed.</li> <li>4. Verify the proper type and rating of all devices, including the following: <ul style="list-style-type: none"> <li>- circuit breakers</li> <li>- contactors</li> <li>- control power transformers</li> <li>- potential transformers</li> <li>- current transformers</li> <li>- fuses</li> <li>- protective relays</li> <li>- meters, switches</li> <li>- auxiliary relays</li> </ul> </li> <li>5. Verify shipping splits have been properly aligned and bolted. Bus splices, including neutral and ground buses, have been properly torqued and ET-2-1 is attached.</li> <li>6. Verify phases are properly labelled on all buses.</li> <li>7. Verify proper grounding of the equipment and ensure that ET-15-2 has been completed for this equipment.</li> <li>8. Perform an insulation resistance test and ensure ET-4-1 is attached.</li> <li>9. Perform a hi-pot test on medium voltage equipment and ensure that a completed copy of ET-18-2 is attached.</li> <li>10. Ensure connecting cables and bus have been properly terminated and that all connections are tight. Verify that ET-1-1, ET-3, ET-12-1, 2 have been completed for all associated cabling and bus.</li> <li>11. Perform a complete functional test of all control circuits. Verify all timers are properly set.</li> </ol>	<b>Contr.</b>	<b>Owner</b>



Inspection and Testing Checklist Switchgear and Motor Control Equipment		ET-7-2
System # _____ System _____		
Equip. Tag # _____ Equipment _____		
Mfg. _____	Type/Model _____	
Voltage _____	Frequency _____	
Rating (A) _____	Phase/Wire _____	
UL Labelling/Area Classification Fault Rating (kA/MVA)		Initials/Date
		Contr.    Owner
12.	Verify equipment has been thoroughly cleaned.	
13.	Verify space heaters are operational.	
14.	Ensure the equipment is undamaged and all paint damage has been touched up.	
15.	Calibrate, set, and test all protective relays. Ensure calibration and test sheet ET-22 for each relay is attached.	
16.	Verify overload reset buttons are free and operational.	
17.	Set trip settings on all molded case circuit breakers in accordance with the drawings.	
18.	Set motor circuit protectors in accordance with the drawings and in no case higher than 1300% of motor full load current.	
19.	Verify proper heaters or settings on all thermal overload relays.	
20.	Inspect and test draw out air circuit breakers in accordance with manufacturer's instructions and ET-8-1, 2. Ensure a copy of ET-8-1, 2 is attached for each circuit breaker.	
21.	Inspect and test medium voltage circuit breakers in accordance with manufacturer's instructions and ET-9-1, 2. Ensure a copy of ET-9-1, 2 is attached for each circuit breaker.	
22.	On oil-immersed equipment, test the insulating oil and ensure ET-11 is attached.	
23.	Prior to energizing the equipment, megger the complete system and verify that the equipment is completely clean.	
24.	Energize split bus equipment with the tie breaker open. phase out across the open tie breaker using hot sticks to verify proper phasing on either side.	
25.	Verify all meters operate properly after equipment is energized.	

Remarks:

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Contractor \_\_\_\_\_ Date \_\_\_\_\_

Owner \_\_\_\_\_ Date \_\_\_\_\_



Inspection and Testing Checklist 480 VAC Switchrack		ET-7-4				
System # _____ Equip. Tag # _____ Rated Voltage _____ Bus Rating (A) _____ Phase/Wire _____	System _____ Equipment _____ Operating Voltage _____ Fault Rating (A) _____ Frequency _____					
UL Labelling/Area Classification		Initials/Date <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 50%; padding: 2px;">Contr.</th> <th style="width: 50%; padding: 2px;">Owner</th> </tr> <tr> <td style="height: 100px;"></td> <td style="height: 100px;"></td> </tr> </table>	Contr.	Owner		
Contr.	Owner					
22. Ensure connecting cables and bus have been properly terminated and that all connections are tight. Verify that ET-1-1, ET-3, ET-12-1, 2 have been completed for associated cabling, conduit and bus.						
23. Perform an insulation resistance test and ensure that ET-4-1 is attached.						
24. Perform a complete functional test of all equipment.						

Remarks:

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Contractor \_\_\_\_\_ Date \_\_\_\_\_

Owner \_\_\_\_\_ Date \_\_\_\_\_

Inspection and Testing Checklist Low Voltage Draw Out Air Circuit Breaker		ET-8-1																																									
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; border-bottom: 1px solid black;">System # _____</td> <td style="width: 50%; border-bottom: 1px solid black;">System _____</td> </tr> <tr> <td style="border-bottom: 1px solid black;">Equip. Tag # _____</td> <td style="border-bottom: 1px solid black;">Equipment _____</td> </tr> <tr> <td style="border-bottom: 1px solid black;">Breaker No. _____</td> <td style="border-bottom: 1px solid black;">Manufacturer _____</td> </tr> <tr> <td style="border-bottom: 1px solid black;">Type/Model _____</td> <td style="border-bottom: 1px solid black;">Serial No. _____</td> </tr> <tr> <td style="border-bottom: 1px solid black;">Voltage _____</td> <td style="border-bottom: 1px solid black;">Rating (AF/AT) _____</td> </tr> </table>				System # _____	System _____	Equip. Tag # _____	Equipment _____	Breaker No. _____	Manufacturer _____	Type/Model _____	Serial No. _____	Voltage _____	Rating (AF/AT) _____																														
System # _____	System _____																																										
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Type/Model _____	Serial No. _____																																										
Voltage _____	Rating (AF/AT) _____																																										
Fault Rating (kA) _____		<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="text-align: center; padding: 2px;">Initials/Date</th> </tr> <tr> <th style="width: 50%; padding: 2px;">Contr.</th> <th style="width: 50%; padding: 2px;">Owner</th> </tr> </thead> <tbody> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> </tbody> </table>		Initials/Date		Contr.	Owner																																				
Initials/Date																																											
Contr.	Owner																																										
<ol style="list-style-type: none"> <li style="margin-bottom: 10px;">1. Verify nameplate data agrees with information shown above.  Nameplate Data: Type/Model _____ Serial No. _____ Voltage _____ Rating (AF/AT) _____ Fault Rating (kA) _____</li> <li style="margin-bottom: 10px;">2. Verify that the solid state trip device has been supplied with the proper functions (i.e., long time, short time, instantaneous, and/or ground).</li> <li style="margin-bottom: 10px;">3. Check that contacts are properly aligned, and are clean and make contact firmly.</li> <li style="margin-bottom: 10px;">4. Check breaker stabs for full engagement.</li> <li style="margin-bottom: 10px;">5. Verify that the spring charging mechanism works on mechanically operated breakers. Ensure that the spring charging motor operates properly on electrically operated breakers. Verify "charged" indication appears in window.</li> <li style="margin-bottom: 10px;">6. Verify proper operation of both mechanical and electrical breaker close operators. Ensure breaker closes firmly with no chatter. Verify "Closed" indication appears in window and red "Closed" indicating light illuminates (where provided).</li> <li style="margin-bottom: 10px;">7. Verify proper operation of both mechanical and electrical breaker trip operators. Ensure "Tripped" indication appears in window and green "Open" indicating light illuminates (where provided).</li> <li style="margin-bottom: 10px;">8. Test trip-free function of the breaker by verifying it will not close with a protective relay actuated.</li> <li style="margin-bottom: 10px;">9. Verify proper operation of breaker in the test position.</li> <li style="margin-bottom: 10px;">10. Verify closing spring is discharged and breaker is tripped when racked out into the disconnected position.</li> <li style="margin-bottom: 10px;">11. Calibrate, set, and test all protective relays. Ensure a calibration and test sheet ET-22 is attached for each one. Trip the breaker from each protective device.</li> <li style="margin-bottom: 10px;">12. Perform an insulation resistance test with the breaker open, between each phase, from each phase to ground, and across the open contacts. Ensure a completed copy of ET-4-1 is attached.</li> <li style="margin-bottom: 10px;">13. Measure the resistance across closed contacts. Maximum acceptable value shall be in accordance with manufacturer's instructions or 200 microhms, whichever is less. Contact Resistance: Phase A _____ B _____ C _____</li> </ol>																																											

Inspection and Testing Checklist Low Voltage Draw Out Air Circuit Breakers		ET-8-2								
System # _____	System _____									
Equip. Tag # _____	Equipment _____									
Breaker No. _____	Manufacturer _____									
Type/Model _____	Serial No. _____									
Voltage _____	Rating (AF/AT) _____									
Fault Rating (kA) _____		Initials/Date								
		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 50%; padding: 2px;">Contr.</th> <th style="width: 50%; padding: 2px;">Owner</th> </tr> <tr> <td style="height: 20px;"></td> <td></td> </tr> <tr> <td style="height: 20px;"></td> <td></td> </tr> <tr> <td style="height: 20px;"></td> <td></td> </tr> </table>	Contr.	Owner						
Contr.	Owner									
14. Verify operation of shunt trip device, if provided.										
15. Ensure breaker is clean.										
16. Perform any additional inspections and tests recommended by the manufacturer.										

Remarks:

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Contractor \_\_\_\_\_ Date \_\_\_\_\_

Owner \_\_\_\_\_ Date \_\_\_\_\_

Inspection and Testing Checklist Medium Voltage Circuit Breakers		ET-9-1	
System # _____ System _____ Equip. Tag # _____ Equipment _____ Breaker No. _____ Manufacturer _____ Type/Model _____ Serial No. _____ Voltage _____ Rating (A/MVA) _____			
		Initials/Date	
		Contr.	Owner
1.	Verify nameplate data agrees with information shown above.  Nameplate Data: Type/Model _____ Serial No. _____ Voltage _____ Rating (A/MVA) _____		
2.	Verify that all mechanical clearances are in accordance with the manufacturer's instructions.		
3.	Visually inspect the breaker to ensure all components have been properly assembled. Check the arc chutes, barriers, TOC switch, blowout coil, arc tips, breaker stabs, control stabs, position indicator, etc.		
4.	Verify proper tension and alignment of the main contacts. Ensure they are clean and make contact firmly and evenly. On vacuum breakers ensure initial contact separation is correct.		
5.	Verify proper charging, closing and tripping operation of the breaker in the connected and test positions. Verify that all indicating lights operate properly.		
6.	Ensure that breakers used as motor controllers can only be closed from the local control switch when in the test position. Ensure remote control circuits can be rendered inoperative for all breakers.		
7.	Verify closing spring is discharged and breaker is tripped when racked out into the disconnected position.		
8.	Calibrate, set, and test all protective relays. Ensure a calibration and test sheet ET-22 is attached for each one. Trip the breaker from each protective device.		
9.	Verify that the circuit breaker cannot be closed with a lockout relay actuated or when reset is required.		
10.	Perform an insulation resistance test with the breaker open, each phase to ground, between phases, and across the open contacts. Ensure a completed copy of ET-4-1 is attached.		
11.	Perform a hi-pot test with the breaker closed, in accordance with Section 4.3 of the Specification. Ensure a completed copy of ET-18-2 is attached.		
12.	Measure the resistance across closed contacts. Maximum acceptable value shall be in accordance with manufacturer's instructions or 500 microhms, whichever is less. Contact Resistance: Phase A _____ B _____ C _____		
13.	Ensure the circuit breaker is clean.		

Inspection and Testing Checklist Medium Voltage Circuit Breakers		ET-9-2				
System # _____ Equip. Tag # _____ Breaker No. _____ Type/Model _____ Voltage _____	System _____ Equipment _____ Manufacturer _____ Serial No. _____ Rating (A/MVA) _____	Initials/Date <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center; padding: 2px;">Contr.</td> <td style="width: 50%; text-align: center; padding: 2px;">Owner</td> </tr> <tr> <td style="height: 400px;"></td> <td style="height: 400px;"></td> </tr> </table>	Contr.	Owner		
Contr.	Owner					
14. Perform any additional inspections and tests recommended by the manufacturer.						

Remarks:

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Contractor \_\_\_\_\_ Date \_\_\_\_\_

Owner \_\_\_\_\_ Date \_\_\_\_\_

Inspection and Testing Checklist Transformers		ET-10-1				
System # _____ Equip. Tag # _____ Mfg. _____ Rating (kVA) _____ Temp Rise _____ Phase _____	System _____ Equipment _____ Class _____ Voltage (Pri/Sec) _____ Impedance _____ Frequency _____					
UL Labelling/Area Classification _____		<table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <th colspan="2" style="padding: 2px;">Initials/Date</th> </tr> <tr> <th style="padding: 2px;">Contr.</th> <th style="padding: 2px;">Owner</th> </tr> </table>	Initials/Date		Contr.	Owner
Initials/Date						
Contr.	Owner					
1. Verify nameplate data agrees with information shown above.  Nameplate Data: Tag _____ Class _____ Phase _____ Rating (kVA) _____ Frequency _____ Temp. Rise _____ Impedance _____ Voltage (Pri/Sec) _____ UL Labelling/Area Classification _____						
2. Verify that installation location and orientation is in accordance with the drawings.						
3. Verify that transformer is not damaged. On oil-immersed transformers inspect for leakage at bushings, fittings, and auxiliary devices.						
4. Perform an insulation resistance test and ensure ET-6 is attached.						
5. Test all auxiliary and protective devices for proper operation. Set alarm and trip points in accordance with the drawings. Verify gages are reading within manufacturer's recommended limits prior to energizing the transformer.						
- fans						
- pumps						
- sudden pressure device contacts						
- relief device contacts						
- temperature gage switch						
- pressure gage switch						
- level gage switch						
- other						
6. Operate the tap changer to each position and verify the turns ratio for each setting does not deviate from 0.5% of nameplate. Leave the tap setting in the position indicated in the project documents.						
7. Ensure connecting cables and bus have been properly terminated and that all connections are tight. Verify that ET-1-1, ET-3, and ET-12-1, 2 have been completed for all associated cabling and bus.						
8. Verify proper grounding of the transformer case and neutral and ensure that ET-15-2, 3 has been completed.						



Inspection and Testing Checklist Transformers		ET-10-2																								
System # _____	System _____																									
Equip. Tag # _____	Equipment _____																									
Mfg. _____	Class _____																									
Rating (kVA) _____	Voltage (Pri/Sec) _____																									
Temp Rise _____	Impedance _____																									
Phase _____	Frequency _____																									
UL Labelling/Area Classification _____	<table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <th colspan="2">Initials/Date</th> </tr> <tr> <th style="width: 50%;">Contr.</th> <th style="width: 50%;">Owner</th> </tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> </table>		Initials/Date		Contr.	Owner																				
Initials/Date																										
Contr.	Owner																									
9. On oil-immersed transformers, test the insulating oil and ensure ET-11 is attached.																										
10. Prior to energizing the transformer, megger the complete system and verify that it is not grounded.																										
11. After energizing the transformer verify that system voltage levels are within design limitations.																										
12. Monitor the transformer closely after it is energized. Verify all operating conditions such as pressure, temperature, and liquid level are within normal limits. After approximately 1 week of operation of oil-immersed transformers, test the insulating oil and complete ET-11.																										
13. Ensure all paint damage has been touched up.																										
14. Perform any additional inspections and tests recommended.																										

Remarks:

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Contractor \_\_\_\_\_ Date \_\_\_\_\_

Owner \_\_\_\_\_ Date \_\_\_\_\_

Testing Record Electrical Equipment Insulating Oil		ET-11
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System # _____	System _____
Equip. Tag # _____	Equipment _____
Compartment _____	Oil Type _____

**DIELECTRIC STRENGTH**

	Pre-energization	Post-energization
Test Method (ASTM D-877 or D-1816):	_____	
Ambient Temperature:	_____	
Relative Humidity:	_____	
Test Performed at (Lab or Field):	_____	
Breakdown Voltage (Average):	_____	
Sample 1	_____	
Sample 2	_____	
Sample 3	_____	
Sample 4	_____	
Sample 5	_____	
Minimum Allowable (kV):	_____	

**OTHER ITEMS**  
(Perform only if Specified)

	Pre-energization	Post-energization
Visual:	_____	
Acidity:	_____	
Color:	_____	
Interfacial Tension:	_____	
Neutralization Number:	_____	
Power Factor:	_____	

INITIALS/DATE:	CONTRACTOR: _____	CONTRACTOR:
	OWNER: _____	OWNER:

Notes:

1. Separate samples shall be tested from each equipment compartment. Samples shall be taken in accordance with ASTM D-923 on a clear, dry day. Sample cleanliness is of utmost importance.
2. Minimum acceptable dielectric breakdown voltage shall be in accordance with manufacturer's requirements, but in no case less than 25 kV for new oil.
3. If tests are performed in a laboratory, attach lab test reports.
4. Tests other than dielectric breakdown shall only be performed if specified by Owner.

Remarks:

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Contractor \_\_\_\_\_ Date \_\_\_\_\_

Owner \_\_\_\_\_ Date \_\_\_\_\_

Inspection and Testing Checklist Bus Duct		ET-12-7					
System # _____ System _____ Equip. Tag # _____ Equipment _____ Mfg. _____ Type/Model _____ Voltage _____ Frequency _____ Rating (A) _____ Phase/Wire _____							
UL Labelling/Area Classification _____ Fault Rating (kA) _____		<table border="1"> <tr> <th colspan="2">Initials/Date</th> </tr> <tr> <td>Contr.</td> <td>OWNER</td> </tr> </table>		Initials/Date		Contr.	OWNER
Initials/Date							
Contr.	OWNER						
<ol style="list-style-type: none"> <li>1. Verify nameplate data agrees with information shown above.   Nameplate Data: Tag _____ Type/Model _____  Voltage _____ Rating (A) _____  Frequency _____  Phase/Wire _____  Fault Rating (kA) _____  UL Labelling/Area Classification _____</li> <li>2. Prior to installation inspect each bus section for damage, such as cracked insulators and loose bus.</li> <li>3. Verify complete bus duct assembly is in accordance with the drawings and that there are no missing parts.</li> <li>4. Verify phases are properly labelled at the end of each bus. Test continuity for the entire length of each phase.</li> <li>5. Verify all bus splices, including neutral and ground buses, have been properly torqued in accordance with manufacturer's recommendations and ET-2-1 is attached.</li> <li>6. Verify gaskets have been installed where specified.</li> <li>7. Ensure complete length of bus duct is properly supported.</li> <li>8. Verify proper grounding and ensure that ET-15-2 is attached.</li> <li>9. Perform an insulation resistance test and ensure ET-4-1 is attached.</li> <li>10. Perform a hi-pot test on medium voltage bus duct and ensure that a completed copy of ET-18-2 is attached.</li> <li>11. Energize space heaters and verify proper operation.</li> <li>12. Prior to energizing, ensure all PVC boots and bus duct covers have been installed.</li> <li>13. Ensure bus duct is completely clean.</li> </ol>							

Inspection and Testing Checklist Bus Duct		ET-12-8				
System # _____ System _____ Equip. Tag # _____ Equipment _____ Mfg. _____ Type/Model _____ Voltage _____ Frequency _____ Rating (A) _____ Phase/Wire _____						
UL Labelling/Area Classification _____ Fault Rating (kA) _____		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="2" style="padding: 2px;">Initials/Date</th> </tr> <tr> <td style="width: 50%; padding: 2px;">Contr.</td> <td style="width: 50%; padding: 2px;">Owner</td> </tr> </table>	Initials/Date		Contr.	Owner
Initials/Date						
Contr.	Owner					
14. Perform any additional inspections and tests in accordance with manufacturer's instructions.						

Remarks:

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Contractor \_\_\_\_\_ Date \_\_\_\_\_

Owner \_\_\_\_\_ Date \_\_\_\_\_

Inspection and Testing Record Battery and Battery Charger		ET-13-1	
System # _____ System _____ Equip. Tag # _____ Equipment _____ Charger Mfg. _____ Charger Model _____ Chg. Volt. (VAC/VDC) _____ Batt. Manf. _____ Batt. Model _____ Batt. Type _____ Batt. Voltage _____ Cell Voltage _____ Rating (A-Hr) _____			
UL Labelling/Area Classification _____		Initials/Date	
		Contr.	Owner
1. Verify nameplate data agrees with information shown above.  Nameplate Data: Tag _____ Charger/Model _____ Chg. Volt. _____ Battery Model _____ Batt. Type _____ Batt. Voltage _____ Cell Volt. _____ Rating (A-Hr.) _____ UL Labelling/Area Classification _____			
2. Ensure battery charger and batteries are installed in accordance with the drawings.			
3. Verify proper grounding of the equipment and ensure that ET-15-2 has been completed. For DC systems to be operated ungrounded, verify that neither positive or negative legs have accidentally become grounded.			
4. Ensure all cells have been numbered.			
5. Ensure the battery room is well ventilated.			
6. After electrolyte is added to the cells, record cell voltages and specific gravities on ET-13-3.			
7. Energize the battery charger and place it in the Float mode. Set the Float voltage in accordance with manufacturer's instructions. Float Values: Voltage _____ Init. Charging Current _____			
8. If applicable, place the charger in the Equalize mode and set the proper equalizing voltage. Equalize Values: Voltage _____ Init. Charging Current _____			
9. Verify proper operation of all meters.			
10. Charge cells in either Float or Equalize modes, as recommended by the manufacturer.			
11. During battery charging, inspect cells for abnormal conditions such as overheating or electrolyte spillage.			
12. After battery is fully charged, record cell voltages and specific gravities.			
13. Perform a battery discharge test in accordance with the specification and record the results on ET-13-4.			
14. Recharge the battery and record final cell voltages and specific gravities. If these are not within the specified limits, consult the battery manufacturer.			

Inspection and Testing Record Battery and Battery Charger		ET-13-1
System # _____	System _____	
Equip. Tag # _____	Equipment _____	
Charger Mfg. _____	Charger Model _____	
Chg. Volt. (VAC/VDC) _____	Batt. Manf. _____	
Batt. Model _____	Batt. Type _____	
Batt. Voltage _____	Cell Voltage _____	
Rating (A-Hr) _____		
UL Labelling/Area Classification _____		
15. Verify proper operation of battery charger alarms and shutdowns and adjust set-points as required: Alarm Set-Points: AC Failure _____ Low DC Voltage Low DC Current		Initials/Date
		Contr.      Owner
16. Ensure the battery is completely clean and battery rack paint has been touched-up as required.		

Remarks:

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Contractor \_\_\_\_\_ Date \_\_\_\_\_

Owner \_\_\_\_\_ Date \_\_\_\_\_

Inspection and Testing Record  
Battery and Battery Charger

ET-13-2

System # \_\_\_\_\_  
 Equip. Tag # \_\_\_\_\_  
 Charger Mfg. \_\_\_\_\_  
 Chg. Volt. (VAC/VDC) \_\_\_\_\_  
 Batt. Model \_\_\_\_\_  
 Batt. Voltage \_\_\_\_\_  
 Rating (A-Hr) \_\_\_\_\_

System \_\_\_\_\_  
 Equipment \_\_\_\_\_  
 Charger Model \_\_\_\_\_  
 Batt. Manf. \_\_\_\_\_  
 Batt. Type \_\_\_\_\_  
 Cell Voltage \_\_\_\_\_

UL Labelling/Area Classification \_\_\_\_\_

Initials/Date	
Contr.	Owner

15. Verify proper operation of battery charger alarms and shutdowns and adjust set-points as required:  
 Alarm Set-Points: AC Failure \_\_\_\_\_ Low DC Voltage  
 Low DC Current

16. Ensure the battery is completely clean and battery rack paint has been touched-up as required.

Remarks:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Contractor \_\_\_\_\_ Date \_\_\_\_\_  
 Owner \_\_\_\_\_ Date \_\_\_\_\_

Inspection and Testing Record Battery and Battery Charger														ET-13-3
Cell #	Prior to Initial Charge		Following Initial Charge		Following Discharge/ Charge		Cell#	Prior to Initial Charge		Following Initial Charge		Following Discharge/ Charge		
	Volt.	SpGr	Volt.	SpGr	Volt.	SpGr		Volt.	SpGr	Volt.	SpGr	Volt.	Sp Gr	

Overall Battery Voltage: Prior \_\_\_\_\_ Following Init./Chg. \_\_\_\_\_ Following Disch./Chg \_\_\_\_\_ Electrolyte Temperature \_\_\_\_\_ °F  
Allowable Range: Voltage \_\_\_\_\_ Specific Gravity \_\_\_\_\_ at \_\_\_\_\_ °F.  
Voltage \_\_\_\_\_ Specific Gravity \_\_\_\_\_ at Electrolyte Temperature.

Remarks:

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Contractor \_\_\_\_\_ Date \_\_\_\_\_  
Owner \_\_\_\_\_ Date \_\_\_\_\_



Inspection and Testing Record Battery and Battery Charger		ET-13-4
<b>BATTERY DISCHARGE TEST RECORD</b>		
Time	Battery Voltage	Load Amperage (DCA)
Battery Rating (A-Hr.): _____ Actual Amp-Hrs.: _____		

Remarks:

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Contractor \_\_\_\_\_ Date \_\_\_\_\_

Owner \_\_\_\_\_ Date \_\_\_\_\_

Inspection and Testing Record Panelboards		ET-14
System # _____ System _____ Equip. Tag # _____ Equipment _____ Mfg. _____		
UL Labelling/Area Classification _____	Initials/Date	
	Contr.	Owner
1. Verify nameplate data agrees with information shown above.  Nameplate Data: Tag _____ Type/Model _____ Voltage _____ Size (No. of Brkrs.) _____ Rating (A) _____ Main Breaker (A) _____ Phase/Wire _____ Frequency _____ UL Labelling/Area Classification _____		
2. Verify that installation location and orientation is in accordance with the drawings.		
3. Verify that the proper size circuit breakers are installed for each circuit.		
4. Verify wire color coding is correct.		
5. Verify proper grounding of the panelboard case and neutral and ensure that ET-15-2 has been completed.		
6. Ensure all wiring is properly terminated and that all connections are tight. Verify that ET-1-1 and ET-3 have been completed (as applicable), for all associated wiring.		
7. Prior to energizing the panelboard, perform an insulation resistance test on the panelboard and its incoming feeders.		
8. Check that circuits are feeding the proper load. Verify that no circuit is overloaded (i.e., operates at no more than 80% of circuit breaker rating).		
9. Test ground fault current interrupters (GFCI's) for proper operation.		
10. Verify that the panelboard circuit schedule has been properly completed and is in place.		
11. Check all breathers, drains and seals.		
12. Check any local switches that may be involved for proper operation.		
13. Check proper operation of photocells, contractors, and other lighting controls.		

Remarks:

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Contractor \_\_\_\_\_ Date \_\_\_\_\_

Owner \_\_\_\_\_ Date \_\_\_\_\_

Inspection and Testing Record Grounding		ET-15-1
System # _____ System		
<u>GROUNDING LOOP</u>		Initials/Date
<ol style="list-style-type: none"> <li>1. Verify the grounding loop installation is in accordance with the drawings and specifications. If the metallic conduit system is used as a ground path, ensure all fittings are made up tight with conductive lubricant and bonding jumpers are installed where required.</li> <li>2. Test the resistance of each ground rod to earth prior to connection into the overall grounding loop. Resistance shall be less than five (5) ohms. Otherwise, another rod shall be installed in parallel or the rod shall be extended and driven deeper.</li> <li>3. Resistance of the grounding loop or metallic conduit system shall be measured to earth at several locations, and the readings recorded below. Resistance to earth shall in no case be greater than one (1) ohm.</li> </ol>	Contr.	Owner
Test Location	Resistance to Earth (ohms)	

Remarks:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Contractor \_\_\_\_\_ Date \_\_\_\_\_

Owner \_\_\_\_\_ Date \_\_\_\_\_

Inspection and Testing Record Grounding				ET-15-2	
System # _____ System					
<u>EQUIPMENT GROUNDING</u>					
Equipment Tag	Equipment	Size & Number of Grounding Conductors Installed	Resistance to Grounding Loop (or Conduit)	Resistance To Earth (ET-15-1)	Total Resistance to Earth

Notes:

1. All electrical and non-electrical equipment shall be grounded in accordance with the drawings and specifications.
2. Equipment grounding conductors shall be bare copper or color coded green as specified.
3. Total equipment ground resistance to earth shall not exceed one (1) ohm.

Remarks:

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Contractor \_\_\_\_\_ Date \_\_\_\_\_

Owner \_\_\_\_\_ Date \_\_\_\_\_

Inspection and Testing Record Grounding					ET-15-3	
System # _____			System _____			
<u>SYSTEM GROUNDING</u>						
Equipment Tag	Equipment	Size of System Grounding Conductor Installed (AWG/MCM)	Grounding Resistor (ohms)	Neutral to Grounding Loop Resistance	Grounding Loop Resistance to Earth (ET-15-1)	Total Resistance To Earth

Notes:

1. System neutrals shall be grounded in accordance with the drawings and specifications.
2. Total system ground resistance to earth shall not exceed one (1) ohm plus the value of the grounding resistor (if any).

Remarks:

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Contractor \_\_\_\_\_ Date \_\_\_\_\_

Owner \_\_\_\_\_ Date \_\_\_\_\_

Inspection and Testing Checklist Neutral Grounding Resistor		ET-16																							
System # _____ System _____ Equip. Tag # _____ Equipment _____ Mfg. _____ Type/Model _____ Voltage _____ Resistance _____ Rating (Amps/Watts/Sec) _____																									
UL Labelling/Area Classification _____	<table border="1"> <thead> <tr> <th colspan="2">Initials/Date</th> </tr> <tr> <th>Contr.</th> <th>Owner</th> </tr> </thead> <tbody> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> </tbody> </table>			Initials/Date		Contr.	Owner																		
Initials/Date																									
Contr.	Owner																								
<ol style="list-style-type: none"> <li>Verify nameplate data agrees with information shown above.  Nameplate Data: Tag _____ Type/Model _____  Voltage _____ Rating (A/W/S) _____  Resistance _____  UL Labelling/Area Classification _____</li> <li>With the resistor disconnected, measure its resistance and verify it agrees with nameplate data. If variable resistors are supplied, set them in accordance with the drawings or manufacturer's recommendations.</li> <li>With the resistor disconnected from ground, perform an insulation resistance test to ground with a 500VDC megger. Insulation Resistance _____</li> <li>On medium voltage grounding resistors, perform a DC hi-pot test in accordance with Section 4.3 of the Specification. Ensure a completed copy of ET-18-2 is attached.</li> <li>Ensure resistors are properly reterminated. Ensure all connections are properly torqued in accordance with manufacturer's recommendations and that ET-2-1 is attached.</li> <li>Perform a complete functional test on all high-resistance grounding equipment.</li> <li>Verify that grounding resistors and auxiliary equipment are clean.</li> </ol>																									

Remarks:

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Contractor \_\_\_\_\_ Date \_\_\_\_\_

Owner \_\_\_\_\_ Date \_\_\_\_\_

Inspection and Testing Checklist Squirrel Cage Induction Motors		ET-17-1																																				
System # _____ System _____ Equip. Tag # _____ Equipment _____ Mfg. _____ Type/Model _____ Serial # _____ HP _____ RPM _____ Voltage _____ FLC(A) _____ Phase _____ Service Factor _____ Code _____ Design _____																																						
UL Labelling/Area Classification _____	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th colspan="2" style="padding: 5px;">Initials/Date</th> </tr> <tr> <th style="width:50%; padding: 5px;">Contr.</th> <th style="width:50%; padding: 5px;">Owner</th> </tr> <tr><td style="height: 20px;"></td><td></td></tr> <tr><td style="height: 20px;"></td><td></td></tr> <tr><td style="height: 20px;"></td><td></td></tr> <tr><td style="height: 20px;"></td><td></td></tr> <tr><td style="height: 20px;"></td><td></td></tr> <tr><td style="height: 20px;"></td><td></td></tr> <tr><td style="height: 20px;"></td><td></td></tr> <tr><td style="height: 20px;"></td><td></td></tr> <tr><td style="height: 20px;"></td><td></td></tr> <tr><td style="height: 20px;"></td><td></td></tr> <tr><td style="height: 20px;"></td><td></td></tr> <tr><td style="height: 20px;"></td><td></td></tr> <tr><td style="height: 20px;"></td><td></td></tr> <tr><td style="height: 20px;"></td><td></td></tr> <tr><td style="height: 20px;"></td><td></td></tr> <tr><td style="height: 20px;"></td><td></td></tr> </table>		Initials/Date		Contr.	Owner																																
Initials/Date																																						
Contr.	Owner																																					
I. GENERAL Verify nameplate data agrees with information shown above. Nameplate Data: Tag _____ Type/Model _____ HP _____ Serial No. _____ RPM _____ Voltage _____ FLC(A) _____ Service Factor _____ Code _____ Phase _____ Design _____ UL Labelling/Area Classification _____																																						
II. MECHANICAL CHECK-OUT																																						
1. Verify that installation orientation is in accordance with the drawings.																																						
2. Remove shipping supports and covers.																																						
3. Visually inspect the motor. Ensure that the frame, end bells and shaft extension are undamaged.																																						
4. On motors with grease lubricated bearings, verify that bearings are adequately, but not excessively, greased. This item is not applicable to motors with sealed bearings.																																						
5. On motors with oil lubricated bearings, verify that oil rings freely operate and that the oil reservoir is filled with oil recommended by the manufacturer.																																						
6. For motors with forced oil lubrication, verify that oil piping is complete and that the lube oil system has been cleaned and checked-out.																																						
7. Properly align the motor to the driven equipment and attach alignment data. Do not install the coupling until uncoupled tests are complete.																																						
8. Verify that the motor rotor turns easily by hand and that there is not friction or binding.																																						
9. Verify that the motor is properly anchored down and all bolts are properly torqued.																																						
10. Verify that air filters or screens have been installed.																																						
11. Verify that enclosure seals and gaskets are intact.																																						

Remarks:

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Contractor \_\_\_\_\_ Date \_\_\_\_\_

Owner \_\_\_\_\_ Date \_\_\_\_\_

Inspection and Testing Checklist Squirrel Cage Induction Motors		ET-17-2	
System # _____ System _____			
		Initials/Date	
		Contr.	Owner
III.	ELECTRICAL CHECK-OUT above.		
1.	Perform an insulation resistance test on the motor and ensure ET-5 is attached.		
2.	Verify the motor and associated surge arrestors and capacitors are properly grounded and that ET-15-2 has been completed.		
3.	Ensure all terminations are complete and tight and that ET-1-1 and ET-3 have been completed for all associated cabling.		
4.	Verify proper operation of the following motor auxiliary devices. -Space heater -vibration switch -RTD's and thermocouples -air filter and DP switch -other:		
5.	Verify that motor CT's are properly wired, if provided. Ensure CT secondaries are not open-circuited.		
6.	Measure the insulation level of insulated bearings with a volt-ohmmeter on the highest resistance scale. Minimum acceptable value is 100k ohms. Bearing Insulation Level: *DE _____ *ODE		
7.	Verify that gaskets are installed where necessary and covers are bolted on tight.		
IV.	MOTOR CONTROL CHECK-OUT		
1.	Ensure that all motor control equipment has been inspected and tested in accordance with Section 5.4 of the Specification and that ET-7-1,2,3,4 has been completed.		
2.	Verify proper installation of all local control stations and control wiring. Ensure control station nameplates have been installed.		
3.	Remove the motor leads at the motor starter and perform a complete functional test of all control circuits. All starting, alarm and shutdown functions are to be checked.		
4.	Reconnect motor leads.		
5.	Record magnetic and overload set-points. Magnetic setting _____ Overload setting		

\* DE = Drive End ODE = Opposite Drive End

Remarks:

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Contractor \_\_\_\_\_ Date \_\_\_\_\_

Owner \_\_\_\_\_ Date \_\_\_\_\_



System # _____ Equip. Tag # _____ Mfg. _____ Serial # _____ RPM _____ FLC (A) _____ Service Factor _____ UL Labelling/Area Classification _____	System _____ Equipment _____ Type/Model _____ HP _____ Voltage _____ Phase _____ Code _____ Design _____
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	RUNNING TEST RECORD		Comments
	Uncoupled	Coupled	
Direction of Rotation: (viewed from drive end)			
Voltage (at MCC):           A to B			
B to C			
A to C			
Starting Current: (any Phase)			
Running Current:           Phase A			
Phase B			
Phase C			
Vibration at Drive End: Vertical			
Horizontal			
Axial			
Opp. Drive End: Vertical			
Horizontal			
Axial			
Bearing Temperature: Drive End			
Opp. Drive End			
Winding Temperature: Phase A			
Phase B			
Phase C			

- Notes:
1. Vibration readings need only be taken for motors larger than 100 hp and motors which run roughly.
  2. Bearing temperatures shall not exceed manufacturer's recommendation or 180 F, whichever is less.
  3. Winding temperatures shall not exceed the allowable total temperature for the specific insulation class provided.
  4. On oil lubricated motors the following shall be verified: oil rings rotate freely, bearings do not leak, and oil levels are maintained, and oil flow, temperature, and pressure are within manufacturer's tolerances.

Remarks:

Contractor \_\_\_\_\_ Date \_\_\_\_\_

Owner \_\_\_\_\_ Date \_\_\_\_\_

System # \_\_\_\_\_

System \_\_\_\_\_

Current at Test Voltage Microamps

CABLE

Cable No.: \_\_\_\_\_

From: \_\_\_\_\_

To: \_\_\_\_\_

Length: \_\_\_\_\_ Ft.

Cable Description:

Manufacturer: \_\_\_\_\_

Insulation Type: \_\_\_\_\_

Shielded? \_\_\_\_\_

Conductor Size: \_\_\_\_\_

3 - 1/C or

1 - 3/C: \_\_\_\_\_

Rated Voltage: \_\_\_\_\_ KV

Operating Voltage: \_\_\_\_\_ KV

Rated Temp.: \_\_\_\_\_ °C

TEST

Initial DC Voltage: \_\_\_\_\_ KV

Test DC Voltage: \_\_\_\_\_ KV

Temperature at Test: \_\_\_\_\_ °C

Humidity: \_\_\_\_\_ %

Time	Phase A	Phase B	Phase C
0			
15 Sec.			
30 Sec.			
45 Sec.			
1 Min.			
1.5 Min.			
2 Min.			
3 Min.			
4 Min.			
5 Min.			
6 Min.			
7 Min.			
8 Min.			
9 Min.			
10 Min.			
11 Min.			
12 Min.			
13 Min.			
14 Min.			
15 Min.			

Remarks:

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Contractor \_\_\_\_\_ Date \_\_\_\_\_

Owner \_\_\_\_\_ Date \_\_\_\_\_

Medium Voltage Equipment DC High Potential Test		ET-18-2		
System # _____ System _____				
Equipment Tag No. _____	Current at Test Voltage Microamps			
Equipment _____	Time	Phase A	Phase B	Phase C
Manufacturer _____	0			
Rated Voltage _____	15 Sec.			
Operating Voltage _____	30 Sec.			
Bus Rating (Amps) _____	45 Sec.			
Fault Rating (Amps)	1 Min.			
Phase/Wire	1.5 Min.			
Frequency	2 Min.			
UL Labelling/Area Class.	3 Min.			
<u>TEST</u>	4 Min.			
Initial DC Voltage: _____ KV	5 Min.			
Test DC Voltage: _____ KV	6 Min.			
Temperature at Test: _____ °C	7 Min.			
Humidity: _____ %	8 Min.			
	9 Min.			
	10 Min.			
	11 Min.			
	12 Min.			
	13 Min.			
	14 Min.			
	15 Min.			

Remarks:

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Contractor \_\_\_\_\_ Date \_\_\_\_\_

Owner \_\_\_\_\_ Date \_\_\_\_\_

Inspection and Testing Checklist Electrical Generator		ET-19		
System # _____	System _____			
Equip. Tag # _____	Equipment _____			
Mfg. _____	Type/Model _____			
Serial # _____	KW _____			
RPM _____	Voltage _____			
PF _____	Phase _____			
Frequency _____				
UL Labelling/Area Classification _____		Initials/Date		
		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; padding: 5px;">Contr.</td> <td style="width: 50%; padding: 5px;">Owner</td> </tr> </table>	Contr.	Owner
Contr.	Owner			
1. Verify nameplate data agrees with information shown above. Nameplate Data: Tag _____ Type/Model _____ KW _____ Serial No. _____ RPM _____ Voltage _____ PF _____ Frequency _____ Phase _____ UL Labelling/Area Classification _____				
2. Verify that installation location and orientation is in accordance with the drawings.				
3. Remove shipping supports and covers.				
4. Verify the unit is properly grounded and that ET-15-2 has been completed.				
5. Ensure all terminations are complete and tight and that ET-1 and ET-3 have been completed for all associated cabling.				
6. Align the generator to its driver using the reverse dial alignment method. Attach alignment records.				
7. Perform an insulation resistance test on generator windings and attach ET-5.				
8. Measure the insulation level of insulated bearings with a volt-ohmmeter. Minimum acceptable level is 100k ohms. Bearing Insulation Level: * DE _____ * ODE _____				
9. Ensure space heaters are operational.				
10. Perform a visual inspection of all equipment and devices. Ensure all valves and switches are in their proper operating position.				
11. Prior to adding fluid into reservoirs, inspect for cleanliness.				
12. Perform a complete functional test on all generator controls. Run all auxiliary equipment such as fans and pumps and attach a completed copy of ET-17-1, 2, 3 for each.				
13. Perform all running tests in accordance with the specifications and the manufacturer's instructions. Attach a complete running log showing all pertinent running data and events.				

\* DE = Drive End, ODE = Opposite Drive End

Remarks:

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Contractor \_\_\_\_\_ Date \_\_\_\_\_

Owner \_\_\_\_\_ Date \_\_\_\_\_

Inspection and Testing Record Heat Tracing		ET-20
System # _____	System _____	
Heater No. _____	Circuit No. _____	
Heater Type _____	Rating (W or W/Ft.) _____	
*Thermostat Type _____	* T-Stat Range _____	
* T-Stat Setpoint _____		
UL Labelling/Area Classification _____		Initials/Date
		Contr.      Owner
1. Prior to heater installation perform a continuity test and a 500VDC insulation resistance test. Record results below.		
2. Following installation, but before equipment and pipe insulation, perform continuity and insulation resistance tests. Record results below.		
3. Verify that heater and thermostat nameplate data agree with information shown above. Nameplate Data: Heater No. _____ Heater Type Rating _____ T-Stat Type T-Stat Range UL Label/Area Classification		
4. Energize each heater and record starting and running (cold) current below.		
*5. Verify proper thermostat operation by varying the setpoint.		
*6. Verify proper operation of the monitor circuit/panel.		
7. Following pipe and equipment insulation, perform continuity and insulation resistance tests. Record results below.		
*8. Verify thermostat set-point is in accordance with the drawings and record the value below.		
9. Ensure proper CAUTION signs are installed over insulation in accordance with the specifications.		

\* If provided or applicable

	Continuity (ohms)	Insulation Resistance (megohms)	
Prior to installation	_____	_____	
After installation	_____	_____	
After insulation	_____	_____	
Starting current			
Running current (cold)			
* Thermostat set-point			
Ambient temperature			_____

Remarks:

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Contractor \_\_\_\_\_ Date \_\_\_\_\_

Owner \_\_\_\_\_ Date \_\_\_\_\_



CT, PT, Protective Relay Calibration		ET-22		
<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;"> System # _____  Substation # _____  Ref. One-Line Diagram _____  Equipment _____  Rated Voltage _____  Bus Rating (A) _____  Phase/Wire _____  UL Labelling/Area Classification _____ </td> <td style="width: 50%; border: none;"> System _____  Substation Name _____  Equipment Tag No. _____  Manufacturer _____  Operating Voltage _____  Fault Rating (A) _____  Frequency _____ </td> </tr> </table>			System # _____ Substation # _____ Ref. One-Line Diagram _____ Equipment _____ Rated Voltage _____ Bus Rating (A) _____ Phase/Wire _____ UL Labelling/Area Classification _____	System _____ Substation Name _____ Equipment Tag No. _____ Manufacturer _____ Operating Voltage _____ Fault Rating (A) _____ Frequency _____
System # _____ Substation # _____ Ref. One-Line Diagram _____ Equipment _____ Rated Voltage _____ Bus Rating (A) _____ Phase/Wire _____ UL Labelling/Area Classification _____	System _____ Substation Name _____ Equipment Tag No. _____ Manufacturer _____ Operating Voltage _____ Fault Rating (A) _____ Frequency _____			
<ol style="list-style-type: none"> <li>1. NEMA Device Symbol</li> <li>2. Service</li> <li>3. Manufacturer</li> <li>4. Model or Style No.</li> <li>5. Characteristic</li> <li>6. Tap Range</li> <li>7. Instrument Range</li> <li>8. Manufacturer's Instrumentation Book No. ____</li> <li>9. C.T. Ratio</li> <li>10. P.T. Ratio</li> <li>11. Overcurrent Relay Setting ("as left") <ol style="list-style-type: none"> <li>a. Tap</li> <li>b. Time Dial</li> <li>c. Inst.</li> </ol> </li> <li>12. Relay Range for Other than O/C Relays</li> <li>13. Relay Settings for Other Than O/C Relays</li> <li>14. Coordination Curve</li> </ol>				

Notes: 1. All time in seconds.

Remarks:

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Contractor \_\_\_\_\_ Date \_\_\_\_\_

Owner \_\_\_\_\_ Date \_\_\_\_\_

Punch List						ET-23
Item No.	Date	Discrepancy/Remedial Action Required	Corrected Date/Initials		Comments	
			Contr.	Owner		

Note: All punch list items addressed and resolved.

Contractor \_\_\_\_\_ Date \_\_\_\_\_

Owner \_\_\_\_\_ Date \_\_\_\_\_



## **SECTION 26 56 00 - EXTERIOR LIGHTING**

### **PART 1 - GENERAL**

#### **1.1 SUMMARY**

- A. Section Includes:
  - 1. Exterior luminaires with lamps and ballasts.
  - 2. Poles and accessories.

#### **1.2 DEFINITIONS**

- A. CCT: Correlated color temperature.
- B. CRI: Color-rendering index.
- C. HID: High-intensity discharge.
- D. LED: Light Emitting Diode
- E. LER: Luminaire efficacy rating.
- F. Luminaire: Complete lighting fixture, including ballast housing if provided.
- G. Pole: Luminaire support structure, including tower used for large area illumination.
- H. Standard: Same definition as "Pole" above.

#### **1.3 DELIVERY, STORAGE, AND HANDLING**

- A. Package galvanized steel poles for shipping according to ASTM B 660.
- B. Store poles on decay-resistant-treated skids at least 12 inches above grade and vegetation. Support poles to prevent distortion and arrange to provide free air circulation.
- C. Handle wood poles so they will not be damaged. Do not use pointed tools that can indent pole surface more than 1/4 inch deep. Do not apply tools to section of pole to be installed below ground line.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Products: Subject to compliance with requirements, provide product indicated on Drawings.

### 2.2 GENERAL REQUIREMENTS FOR POLES AND SUPPORT COMPONENTS

- A. Luminaire Attachment Provisions: Comply with luminaire manufacturers' mounting requirements. Use stainless-steel fasteners and mounting bolts unless otherwise indicated.
- B. Mountings, Fasteners, and Appurtenances: Corrosion-resistant items compatible with support components.
  - 1. Materials: Shall not cause galvanic action at contact points.
  - 2. Anchor Bolts, Leveling Nuts, Bolt Caps, and Washers: Hot-dip galvanized after fabrication unless otherwise indicated.
  - 3. Anchor-Bolt Template: Plywood or steel.

## PART 3 - EXECUTION

### 3.1 LUMINAIRE INSTALLATION

- A. Install lamps in each luminaire.
- B. Fasten luminaire to indicated structural supports.
  - 1. Use fastening methods and materials selected to resist seismic forces defined for the application and approved by manufacturer.
- C. Adjust luminaires that require field adjustment or aiming [ Include adjustment of photoelectric device to prevent false operation of relay by artificial light sources, favoring a north orientation].

### 3.2 POLE INSTALLATION

- A. Alignment: Align pole foundations and poles for optimum directional alignment of luminaires and their mounting provisions on the pole.
- B. Clearances: Maintain the following minimum horizontal distances of poles from surface and underground features unless otherwise indicated on Drawings:
  - 1. Fire Hydrants and Storm Drainage Piping: 60 inches.
  - 2. Water, Gas, Electric, Communication, and Sewer Lines: 10 feet.
  - 3. Trees: 15 feet from tree trunk.

- C. Embedded Poles with Tamped Earth Backfill: Set poles to depth below finished grade indicated on Drawings, but not less than one-sixth of pole height.
  - 1. Dig holes large enough to permit use of tampers in the full depth of hole.
  - 2. Backfill in 6-inch layers and thoroughly tamp each layer so compaction of backfill is equal to or greater than that of undisturbed earth.
- D. Embedded Poles with Concrete Backfill: Set poles in augered holes to depth below finished grade indicated on Drawings, but not less than one-sixth of pole height.
  - 1. Make holes 6 inches in diameter larger than pole diameter.
  - 2. Fill augered hole around pole with air-entrained concrete having a minimum compressive strength of 3000 psi at 28 days, and finish in a dome above finished grade.
  - 3. Use a short piece of 1/2-inch-diameter pipe to make a drain hole through concrete dome. Arrange to drain condensation from interior of pole.
  - 4. Cure concrete a minimum of 72 hours before performing work on pole.
- E. Poles and Pole Foundations Set in Concrete Paved Areas: Install poles with minimum of 6-inch-wide, unpaved gap between the pole or pole foundation and the edge of adjacent concrete slab. Fill unpaved ring with pea gravel to a level 1 inch below top of concrete slab.
- F. Raise and set poles using web fabric slings (not chain or cable).

### 3.3 CORROSION PREVENTION

- A. Aluminum: Do not use in contact with earth or concrete. When in direct contact with a dissimilar metal, protect aluminum by insulating fittings or treatment.

### 3.4 GROUNDING

- A. Ground metal poles and support structures according to Section 26 05 26 "Grounding and Bonding for Electrical Systems."
  - 1. Install grounding electrode for each pole unless otherwise indicated.
  - 2. Install grounding conductor pigtail in the base for connecting luminaire to grounding system.
- B. Ground nonmetallic poles and support structures according to Section 26 05 26 "Grounding and Bonding for Electrical Systems."
  - 1. Install grounding electrode for each pole.
  - 2. Install grounding conductor and conductor protector.
  - 3. Ground metallic components of pole accessories and foundations.

3.5 FIELD QUALITY CONTROL

- A. Inspect each installed fixture for damage. Replace damaged fixtures and components.
- B. Illumination Observations: Verify normal operation of lighting units after installing luminaires and energizing circuits with normal power source.
  - 1. Verify operation of photoelectric controls.

3.6 DEMONSTRATION

- A. Train Owner's maintenance personnel to adjust, operate, and maintain luminaire lowering devices.

**END OF SECTION 26 56 00**



## **SECTION 31 62 16 - STEEL PILES**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### **1.2 SUMMARY**

- A. Section includes the following types of steel piles.
  - 1. Open-ended pipe piles.
- B. Related Requirements:
  - 1. Section 09 90 00 "Painting and Coating" for surface-preparation and priming requirements.

#### **1.3 ACTION SUBMITTALS**

- A. Product Data: For each type of product.
  - 1. Mill Test Reports certified by a third party testing agency
  - 2. Welding certificates for all listed and unlisted materials
  - 3. Weld testing laboratory to be approved by Owner
  - 4. Welders Qualifications
- B. Shop Drawings: For steel piles. Show fabrication and installation details for piles, including details of driving points, splices, and pile caps.
  - 1. Indicate welds by standard AWS symbols, distinguishing between shop and field welds, and show size, length, and type of each weld.
- C. Pile-Driving Equipment Data: Include type, make, and rated energy range; weight of striking part of hammer; weight of drive cap; and, type, size, and properties of hammer cushion.

#### **1.4 INFORMATIONAL SUBMITTALS**

- A. Welding certificates.
- B. Mill Test Reports: For open-ended pipe piles, signed by manufacturer.
- C. Pile-Driving Equipment Data: Include type, make, and rated energy range; weight of striking part of hammer; weight of drive cap; and, type, size, and properties of hammer cushion.

- D. Pile-Driving Records: Submit within three days of driving each pile.
- E. Certified Piles Survey: Submit within seven days of pile driving completion.
- F. Field quality-control reports.

#### 1.5 QUALITY ASSURANCE

- A. Testing Agency Qualifications: Qualified according to ASTM E 329 for testing indicated.
- B. Welding Qualifications: Qualify procedures and personnel according to the latest version of AWS D1.1/D1.1M, "Structural Welding Code - Steel."
- C. Weld Testing: The Contractor shall be responsible for the cost of weld testing. The Contractor shall coordinate all tests. The Owner's Representative shall be notified a minimum of 24 hours prior to each test session.
- D. Weld Testing: Ultrasonic Testing is required for 100% of steel pile field splice welds. Alternative test methods must be approved, in advance, by the Owner's representative.

#### 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver piles to Project site in such quantities and at such times to ensure continuity of installation. Handle and store piles at Project site to prevent buckling or physical damage.
  - 1. Painted Piles: Protect finish and touch up paint damage before driving piles.

#### 1.7 FIELD CONDITIONS

- A. Protect structures, underground utilities, and other construction from damage caused by pile driving.
- B. Site Information: A geotechnical report has been prepared for this Project and is referenced elsewhere in the Project Manual for information only.

### PART 2 - PRODUCTS

#### 2.1 OPEN ENDED PIPE PILES

- A. Welded and Seamless Steel Pipe Piles: ASTM A 252, Grade 2, 35,000-psi yield strength unless otherwise noted on the Contract Drawings.
- B. No spiral weld or lap weld pile shall be allowed.

#### 2.2 FABRICATION

- A. All pile material shall be new material with mill certificates. Any Contractor desiring to include the use of surplus pipe (new unused pipe without mill certificates) shall include with their bid proposal the results of one tensile test performed on the proposed material for each class (diameter, heat number, and wall thickness) of pipe required for the project. If the tensile test data for the

surplus material does not accompany the bid proposal, it will be the responsibility of the Contractor to provide, at no additional cost to the Owner, new material with mill certificates if awarded the project. All costs associated with identifying steel shall be the responsibility of the Contractor.

- B. Fabrication tolerances shall be in accordance with API RP 2B, latest edition. Where wall thickness is changed within the length of piles, the outside diameter shall remain constant.
- C. The minimum length of a segment of pipe used in fabricating piles shall be 5 feet.
- D. The length of steel pile shown on the Contract Drawings is to the length required after the pile is driven and cutoff is accomplished. Provide piles of sufficient length to account for the added length required for the hammer in use and for cutoff, such that the final driven and cutoff pile is the exact length as required on the Contract Drawings.
- E. Fabricate and assemble piles in shop to greatest extent possible.
- F. Pile-Length Markings: Mark each pile with horizontal lines at 12-inch intervals; label the distance from pile tip at 60-inch intervals. Maintain markings on piles until driven.
- G. Fabricate full-length piles to eliminate splicing during driving, with ends square.
- H. Fabricate full-length piles by splicing lengths of steel pile together. Accurately mill meeting ends of piles and bevel for welding. Maintain axial alignment of pile lengths. Maintain structural properties of pile across splice.
  - 1. Continuously Welded Splices: Splice piles by continuously welding according to AWS D1.1/D1.1M for procedures, appearance and quality of welds, and methods used in correcting welding work.
- I. Fit and weld driving points to tip of pile according to manufacturer's written instructions and AWS D1.1/D1.1M for procedures, appearance and quality of welds, and methods used in correcting welding work.

## 2.3 SHOP PAINTING

- A. General: Shop paint steel pile surfaces as indicated on the Project Drawings and in accordance with Section 09 90 00 "Painting and Coating."

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Site Conditions: Do not start pile-driving operations until earthwork fills have been completed or excavations have reached an elevation of 6 to 12 inches above bottom of footing or pile cap.

### 3.2 DRIVING EQUIPMENT

- A. All piles shall be driven using a hammer of sufficient energy to properly drive the piles into place.

1. The Contractor shall submit the type of hammer to be used to the Owner and Engineer for approval prior to award of the project.
- B. The Contractor shall install the piles to the depth indicated on the Contract Drawings. He shall select equipment and methods of accomplishing this penetration without damaging piles in any manner.
- C. The Contractor is responsible for supplying at the tip and butt of piles reinforcement in order to avoid damage to the piles during driving.
- D. The Contractor is to have available at the site, or within short notice should be able to provide pump and jetting equipment should the normal pile driving means not place the pile at its design penetration. Contractor is cautioned that should jetting or pumping be necessary, no additional cost will be charged to Owner.

### 3.3 DRIVING PILES

- A. General: Continuously drive piles to elevations indicated. Establish and maintain axial alignment of leads and piles before and during driving.
- B. Jetting: Jetting will be allowed only as directed or approved by the Engineer.
  1. All jetting shall be done in such a manner to keep the jet pipe properly aligned with the axis of the pile.
  2. Jetting of pipe piles shall be done from the inside of the pile.
  3. After jetting is terminated the pile shall be driven for approximately five (5) feet without aid of a jet.
  4. If jetting is required for driving, it will be performed at no additional cost to the Owner.
- C. Heaved Piles: Redrive heaved piles to tip elevation at least as deep as original tip elevation with a driving resistance at least as great as original driving resistance.
- D. Driving Tolerances: Drive piles without exceeding the following tolerances, measured at pile heads:
  1. Location: 3 inches from location indicated after driving is complete and pile cutoff.
  2. Plumb: Maintain 1/8 inch from vertical.
  3. Batter Angle: Maximum 1/8 from required angle.
- E. Cut off tops of driven piles square with pile axis and at elevations indicated.
- F. No piles shall be left unsupported after driving. No wavering or oscillation of piles will be allowed.



- G. Pile-Driving Records: The Contractor shall furnish a detailed record for each pile showing diameter or cross section, length, hammer (make and model), driving time, observation of speed blows for each foot, points of stoppages and all other pertinent information. The form to be used to record data is included and should be photocopied and used for recording data on each pile.
- H. Certified Piles Survey: The Contractor will be responsible for all layout and surveying required to place the piles at the locations indicated on the drawings. If changes occur in this layout, subsequent surveying will also be accomplished by the Contractor.
  - 1. Notify Engineer when deviations from locations exceed allowable tolerances.

### 3.4 FIELD QUALITY CONTROL

- A. Testing Agency: Engage a qualified testing agency to perform tests and inspections.
- B. Tests and Inspections:
  - 1. Dynamic Pile Testing: High-strain dynamic monitoring shall be performed and reported according to ASTM D 4945 during initial driving and during restriking on 3 percent of piles, not exceeding five single piles, at locations prescribed by the engineer.
  - 2. Weld Testing: In addition to visual inspection, welds shall be tested and inspected according to AWS D1.1/D1.1M and inspection procedures listed below, at testing agency's option. Correct deficiencies in Work that test reports and inspections indicate do not comply with the Contract Documents.
    - a. Liquid Penetrant Inspection: ASTM E 165.
    - b. Magnetic Particle Inspection: ASTM E 709; performed on root pass and on finished weld. Cracks or zones of incomplete fusion or penetration are not accepted.
    - c. Radiographic Inspection: ASTM E 94, minimum quality level "2-2T."
    - d. Ultrasonic Inspection: ASTM E 164.
    - e. Full penetration welds shall be tested by Radiographic or Ultrasonic Inspections only.
- C. Steel piles will be considered defective if they do not pass tests and inspections.
- D. Prepare test and inspection reports.

### 3.5 TOUCHUP PAINTING

- A. General: Touch up painting shall be performed in accordance with Section 09 90 00 "Painting and Coating."
- B. Clean field welds, splices, and abraded painted areas and field-apply paint according to SSPC-PA 1. Use same paint and apply same number of coats as specified for shop painting.

1. Apply touchup paint before driving piles to surfaces that are immersed or inaccessible after driving.

3.6 DISPOSAL

- A. Remove withdrawn piles and cutoff sections of piles from site, and legally dispose of them off Owner's property.

**END OF SECTION 31 62 16**





PROCESS  
INDUSTRY  
PRACTICES

TECHNICAL CORRECTION  
*December 2021*

***Civil***

**PIP CVS02100  
Site Preparation, Excavation,  
and Backfill Specification**

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## PURPOSE AND USE OF PROCESS INDUSTRY PRACTICES

In an effort to minimize the cost of process industry facilities, this Practice has been prepared from the technical requirements in the existing standards of major industrial users, contractors, or standards organizations. By harmonizing these technical requirements into a single set of Practices, administrative, application, and engineering costs to both the purchaser and the manufacturer should be reduced. While this Practice is expected to incorporate the majority of requirements of most users, individual applications may involve requirements that will be appended to and take precedence over this Practice. Determinations concerning fitness for purpose and particular matters or application of the Practice to particular project or engineering situations should not be made solely on information contained in these materials. The use of trade names from time to time should not be viewed as an expression of preference but rather recognized as normal usage in the trade. Other brands having the same specifications are equally correct and may be substituted for those named. All Practices or guidelines are intended to be consistent with applicable laws and regulations including OSHA requirements. To the extent these Practices or guidelines should conflict with OSHA or other applicable laws or regulations, such laws or regulations must be followed. Consult an appropriate professional before applying or acting on any material contained in or suggested by the Practice.

This Practice is subject to revision at any time.

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# PIP CVS02100 Site Preparation, Excavation, and Backfill Specification

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## Table of Contents

<b>1. Scope .....</b>	<b>2</b>
<b>2. References .....</b>	<b>2</b>
2.1 Process Industry Practices .....	2
2.2 Industry Codes and Standards .....	2
2.3 Government Regulations .....	3
<b>3. Definitions .....</b>	<b>3</b>
<b>4. Requirements .....</b>	<b>4</b>
4.1 General.....	4
4.2 Materials – Fill and Backfill .....	10
4.3. Construction .....	11

## 1. Scope

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This Practice describes the requirements for excavation, placement, inspection, and management of materials during the site preparation, excavation, and backfill phase of a construction project.

## 2. References

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Applicable parts of the following Practices, industry codes and standards, and references shall be considered an integral part of this Practice. The edition in effect on the date of contract award shall be used, except as otherwise noted. Short titles are used herein where appropriate.

### 2.1 Process Industry Practices (PIP)

- PIP CVS02350 - *Roadway and Area Paving Construction Specification*

### 2.2 Industry Codes and Standards

- ASTM International (ASTM)
  - ASTM C136/C136M - *Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates*
  - ASTM D698 - *Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft<sup>3</sup> (600 kN-m/m<sup>3</sup>))*
  - ASTM D1140 - *Standard Test Methods for Determining the Amount of Material Finer Than the 75- $\mu$ m (No.200) Sieve in Soils by Washing*
  - ASTM D1556/D1556M - *Standard Test Method for Density and Unit Weight of Soil in Place by Sand-Cone Method*
  - ASTM D1557 - *Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft<sup>3</sup> (2700 kN-m/m<sup>3</sup>))*
  - ASTM D2167 - *Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method*
  - ASTM D2937 - *Standard Test Method for Density of Soil in Place by the Drive-Cylinder Method*
  - ASTM D3740 - *Standard Practice for Minimum Requirements for Agencies Engaged in Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction*
  - ASTM D4253 - *Standard Test Methods for Maximum Index Density and Unit Weight of Soils Using a Vibratory Table*
  - ASTM D4254 - *Standard Test Methods for Minimum Index Density and Unit Weight of Soils and Calculation of Relative Density*
  - ASTM D4318 - *Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils*
  - ASTM D5084 - *Standard Test Methods for Measurement of Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter*
  - ASTM D5268 - *Standard Specification for Topsoil Used for Landscaping Purposes*
  - ASTM D6938 - *Standard Test Methods for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)*

## 2.3 Government Regulations

- U.S. Department of Labor, Occupational Safety and Health Administration (OSHA)
  - 29 CFR 1926 - *Safety and Health Regulations for Construction*
- U.S. Environmental Protection Agency (EPA)
  - 40 CFR 122 *National Pollutant Discharge Elimination System (NPDES) General Permit for Point Source Discharge to Public Waterways (Permit)*

## 3. Definitions

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*Best Management Practices (BMP):* The techniques (e.g., buffers, silt fences, detention ponds, swales, etc.), schedules of activities, prohibitions of practices, and maintenance procedures used to prevent or reduce the discharge of pollutants

*constructor:* Party responsible for supplying the materials, equipment, tools, supervision, and labor for performing site preparation, excavation, fill, and backfill in accordance with contract documents. The term constructor applies also to constructor's subcontractor(s) and vendor(s).

*contract documents:* Any and all documents, including codes, studies, design drawings, specifications, sketches, practices, and data sheets that purchaser or engineer of record has transmitted or otherwise communicated, either by incorporation or reference, and made part of the legal contract agreement or purchase order between purchaser and constructor

*engineer of record:* Purchaser's authorized representative with overall authority and responsibility for engineering design, quality, and performance of civil works, structure, foundations, materials, and appurtenances described in contract documents. Engineer of record is licensed as defined by laws of the locality in which the work is to be constructed, and is qualified to practice in the specialty discipline required for the work described in contract documents.

*impermeable fill:* Compacted clay fill which has a hydraulic conductivity of less than one foot per year ( $1 \times 10^{-6}$  cm/second) using the fluids to be retained

*inspector:* Party responsible for verifying quality of all materials, installations, and workmanship furnished by constructor. Inspector is qualified by training and experience and holds certifications or documentation of their qualifications. Unless otherwise specified in contract documents, inspector is an independent party retained by purchaser

*owner:* Party who has authority through ownership, lease, or other legal agreement over project site

*professional engineer:* An engineer, other than engineer of record licensed as defined by laws of the locality in which the work is to be performed, and qualified to practice in the specialty discipline required for the work described in contract documents

*purchaser:* The party who awards contract to constructor. Purchaser may be owner or the owner's authorized agent.

*Storm Water Pollution Prevention Plan (SWPPP):* Written plan that defines erosion and sediment control practices in accordance with the independent requirements of the federal construction general permits

## 4. Requirements

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### 4.1 General

#### 4.1.1 Quality Control and Submittals

- 4.1.1.1 ~~A written Quality Control Program document that provides details of how compliance with the requirements of this Practice and contract documents shall be achieved shall be submitted by constructor to purchaser for approval a minimum of 15 days before start of construction.~~
- 4.1.1.2 Certified laboratory test data for materials and products to be used in work shall be submitted to purchaser for approval a minimum of 15 days before shipping of materials and products.
- 4.1.1.3 Results of quality control tests required during performance of work shall be submitted to purchaser within 48 hours of completion.
- 4.1.1.4 Inspector will provide submittals listed in Section 4.1.2.2 to purchaser and constructor.
- 4.1.1.5 The following submittals shall be provided to purchaser. Data shall include horizontal dimensions, elevations, size, and slope gradients, as appropriate for the utility and as required by purchaser:
  - a. Accurately recorded as-built locations of project-installed underground utilities
  - b. Tie-in points/interferences encountered during project construction
- 4.1.1.6 ~~Notify purchaser not less than five days in advance of any blasting operation. Blasting shall commence only after owner approval provided by purchaser.~~
- 4.1.1.7 If excavation bracing (i.e., shoring and sheeting, manufactured systems) is required, the following submittals shall be provided to purchaser:
  - a. Plans, sketches, and/or details of the materials and shoring system to be used, including sequence and method of installation
  - b. Supporting calculations prepared by a professional engineer
  - c. Identification of any bracing components that shall remain after filling or backfilling
- 4.1.1.8 If dewatering of an excavation is required, proposed methods and details shall be submitted to purchaser for review before beginning excavation.
- 4.1.1.9 If required by an authority having jurisdiction, a soil erosion control plan and/or a storm water runoff pollution prevention plan shall be provided to purchaser and the appropriate authority.
- 4.1.1.10 If completed work is not in accordance with this Practice, constructor shall be responsible for repairing or reconstructing deficiencies to meet this Practice and other contract documents at constructor's expense.



#### **4.1.2 Quality Assurance and Submittals**

- 4.1.2.1 Inspector shall perform field and laboratory testing and/or evaluations in accordance with criteria of *ASTM D3740* to verify compliance of work with requirements of this Practice and to ensure achievement of intents and purposes of the work.
- 4.1.2.2 Inspector shall provide the following submittals to purchaser and constructor:
  - a. A statement attesting that constructor's work is in accordance with requirements of this Practice and contract documents
  - b. Informal daily "pass" or "fail" reports
  - c. Formal weekly reports including all test logs and comments. These formal reports shall include density and moisture content test logs, indicating location of tests by coordinates and elevation and all appropriate comments.
  - d. Upon earthwork completion, all density and moisture content test logs and comments compiled and submitted for permanent project records.
  - e. Sources and test results of all borrow materials used for fill.
- 4.1.2.3 During construction, purchaser shall have access to all constructor's facilities and records for purpose of conducting performance inspection/audits.
- 4.1.2.4 During an audit by purchaser, all inspection and test reports, and/or engineering analyses and calculations associated with scope of work shall be provided to purchaser upon request.

#### **4.1.3 Surveying**

All lines and grades shall be determined by constructor for constructor's operations from horizontal and vertical control points furnished by purchaser.

#### **4.1.4 Inspection and Testing**

- 4.1.4.1 Unless otherwise specified in contract documents, inspector shall be responsible for quality assurance inspection and testing to ensure that work is in accordance with requirements of this Practice and contract documents.
- 4.1.4.2 Inspector shall perform tests as outlined in Section 4.1.5 or as otherwise specified in contract documents.
- 4.1.4.3 Performance or lack of performance of inspections and testing by inspector shall not be construed as granting relief for constructor from meeting requirements of this Practice or other contract documents.

#### **4.1.5 Tests to be Performed**

- 4.1.5.1 Tests of gradation, plasticity, density, and moisture content shall be performed for each type of fill material. These tests shall include the following:

- a. One standard sieve analysis in accordance with *ASTM C136/136M* or *ASTM D1140*
  - b. One liquid and plastic limit determination in accordance with *ASTM D4318*
  - c. One Modified Proctor Test in accordance with *ASTM D1557* or one Standard Proctor Test in accordance with *ASTM D698*
- 4.1.5.2 For granular soils that do not exhibit a well-defined moisture-density relationship, index density, unit weight, and relative density shall be determined in accordance with *ASTM D4253* and *ASTM D4254*.
- 4.1.5.3 If type or source of fill material changes, control tests shall be performed again with the new material.
- 4.1.5.4 Unless otherwise specified in contract documents, the following in-place dry density and moisture content testing (i.e., field density testing) on compacted fill shall be performed using one of the following methods:
- a. Sand-cone method in accordance with *ASTM D1556/D1556M*
  - b. Nuclear methods in accordance with *ASTM D6938*
  - c. Rubber balloon method in accordance with *ASTM D2167*
  - d. Drive-cylinder method in accordance with *ASTM D2937*
- 4.1.5.5 Unless otherwise specified in contract documents, field density testing shall be performed at the following frequencies:
- a. Structural fill under foundations and building slabs – one test every 1000 square feet (90 square meters) of each lift
  - b. Structural fill under roadways, railroads, area pavement and parking areas – one test every 2000 square feet (180 square meters) of each lift
  - c. Road base and sub-base – one test every 2000 square feet (180 square meters) of each lift
  - d. Backfill of trenches – one test for every 150 linear feet (45 linear meters) of each lift and one test within each segment between changes in direction.
  - e. Backfill over foundations – one test for every 1000 square feet (90 square meters) of each lift.
  - f. General fill – one test every 5000 square feet (460 square meters) of each lift
- 4.1.5.6 As a minimum, one in-place moisture content and one density test shall be performed on every lift of fill.
- 4.1.5.7 Until the required dry density has been achieved, further placement of fill or backfill shall not be permitted.
- 4.1.5.8 Number of field density tests shall be increased by 50% if more than 4% of tests fail to meet specified dry density. When failed tests become less

than 2%, number of tests shall revert to original specified frequency in Section 4.1.5.5.

- 4.1.5.9 For impermeable soil a sample shall be taken from each surface (i.e., base, side walls of ponds/ditches). At least one sample shall be taken at 22,500 square feet (2,090 square meters) or less.

#### **4.1.6 Protection**

- 4.1.6.1 Temporary fences, guardrails, barricades, lights, and other protective measures required for safety of personnel and premises shall be installed and maintained in good condition.
- 4.1.6.2 All reference points (e.g., property markers, benchmarks, etc.) shall be carefully maintained during excavation, backfilling, compaction, and earthwork.
- 4.1.6.3 If a reference point is damaged during performance of the work, reference point shall be repaired or replaced in accordance with requirements of owner.
- 4.1.6.4 Unless otherwise specified in contract documents, before earthwork begins, purchaser shall locate and mark all known utilities within project limits or note them in contract documents.
- 4.1.6.5 If other utility locations become evident as earthwork progresses, work stoppages may be required by owner until utilities are identified and until owner provides specific direction.
- 4.1.6.6 Utilities scheduled to remain shall be protected and preserved.
- 4.1.6.7 Bracing and shoring shall be used to protect excavations adjacent to existing underground installations (e.g., foundations, piping manholes, electrical, and duct banks) and personnel performing excavation activities during construction.
- 4.1.6.8 Unless otherwise specified in contract documents, excavation under foundations shall not be permitted.
- 4.1.6.9 Damage to structures, utility lines, or graded areas caused by erosion shall be repaired to original condition at constructor's expense. This includes areas that are seeded until such time that vegetation prevents erosion.
- 4.1.6.10 During performance of the work, constructor shall prevent dust from harming individuals and damaging adjacent properties and equipment.

#### **4.1.7 Environmental**

##### **4.1.7.1 Contaminated Soils and Water**

1. Known contaminated soils within construction limits shall be managed in accordance with soil management plan and contract documents.
2. If unexpected soil contamination is encountered during the work, work shall be stopped and owner shall be notified immediately.
3. Water to be discharged that is potentially contaminated shall be managed in accordance with contract documents.

#### 4.1.7.2 Erosion/Sediment Control

1. All procedures and work shall be in accordance with local, state, and federal regulations including NPDES General Permit for Point Source Discharge to Public Waterways or project specific permit.
2. Construction affected areas shall be maintained using temporary erosion and sediment control measures, in accordance with Storm Water Pollution Prevention Plan (SWPPP) requirements until permanent measures are completed and functioning.
3. Inspections and reporting shall be performed as specified by SWPPP.
4. If a project specific SWPPP is not required in contract documents, the following minimum prevention measures shall be provided unless otherwise specified by owner:
  - a. Silt Fence

Silt fence shall be installed in accordance with contract documents and on downslope sides of the following areas:

    - (1) All disturbed areas
    - (2) All stockpile areas
  - b. Inspections
    - (1) Daily inspections shall be performed in areas of active construction or equipment operation.
    - (2) Weekly inspections shall be performed in areas with no construction or equipment operation.
    - (3) Area inspections shall be performed within 24 hours of each 0.5-inch (13-mm) or greater rainfall event.
    - (4) Inspection reports shall be prepared after each inspection and submitted to purchaser within 2 working days.
  - c. Maintenance
    - (1) Sediment shall be removed from behind silt fence if it exceeds 6 inches (150 mm) in height. Removed sediment shall be placed in topsoil stockpile areas.
    - (2) Any silt fence damaged so it cannot perform its intended function shall be replaced.
    - (3) Silt fence shall be removed after area has been surfaced or seeded and has been approved by purchaser.
    - (4) Soil that is spilled or washed onto paved areas or streets shall be removed from the surface daily.
    - (5) Soil that breaches constructor's erosion and sediment control measures and spills or washes into drains, pipes, gutters, or ditches or onto adjacent property shall be removed at least daily. Measures shall be provided to prevent recurrence.

- (6) Erosion/sediment controls shall be revised as conditions change during construction or if the minimum sediment control measures are not effective in controlling erosion and sediment.
- (7) Construction site shall be kept free of trash, and storage bins shall be kept covered.

#### **4.1.8 Safety**

##### **4.1.8.1 General**

1. Work shall be in accordance with *OSHA 29 CFR 1926* and other applicable federal, state, and local codes and with safety requirements of owner.
2. Unless otherwise specified in the contract documents, a work permit shall be obtained from owner before performing earthwork.

##### **4.1.8.2 Excavation Safety**

1. Constructor is solely responsible for designing and constructing stable excavations as mandated by *OSHA29 CFR 1926, Subpart P*.
2. Excavation and trench safety systems include, but are not limited to, sloping, sheeting, trench boxes or trench shields, sheet piling, cribbing, bracing, shoring, dewatering or diversion of water to provide adequate drainage.
3. Constructor's "competent" representative, as defined in *OSHA 29 CFR Part 1926.650 to 652* shall evaluate soil exposed in excavations and verify that excavation and trench safety systems, are certified for actual installation conditions as part of constructor's safety procedures.
4. Excavation slope height, slope inclination, and depth, including utility trench excavation depth, shall not be greater than specified in local, state, and federal safety regulations.
5. If evidence of possible cave-ins or slides is apparent, constructor shall immediately stop work in the excavation or trench and move personnel to safe locations until necessary precautions have been taken by Constructor to safeguard personnel entering trench.
6. Confined space entry permits shall be required for trenches and excavations qualifying as OSHA "permit required confined spaces."

##### **4.1.8.3 Blasting**

- ~~1. If blasting is required, a written blasting safety plan shall be submitted for owner's approval.~~ 1
- ~~2. Permits for blasting shall be obtained by constructor from authorities having jurisdiction.~~
- ~~3. Copies of blasting permits shall be submitted to purchaser.~~
- ~~4. Written permission shall be obtained from owner before explosives are brought to the site and before drilling is started.~~

- ~~5. Explosives shall be stored, handled, and used in accordance with local regulations and owner's safety practices. These criteria shall be addressed in the blasting safety plan.~~
- ~~6. Constructor shall be responsible for all blasting operations.~~

## 4.2 Materials – Fill and Backfill

### 4.2.1 Basic Requirements

- 4.2.1.1 Fill and backfill materials shall be from either on-site excavation, designated borrow areas, or off-site sources in accordance with requirements of Sections 4.2.1.3, 4.2.3, and 4.2.4.
- 4.2.1.2 All borrow material and all supply sources shall be submitted to purchaser and approved by engineer of record.
- 4.2.1.3 Fill and backfill shall contain no rocks or stones larger than ~~3 inches (75 mm)~~ 2 and shall be free of frozen lumps, organic matter, trash, chunks of highly plastic clay, snow, ice, contamination, or other deleterious material.
- 4.2.1.4 Liquid limit and plastic limit of materials shall be determined in accordance with *ASTM D4318*.

### 4.2.2 Topsoil

Topsoil shall conform to *ASTM D5268* or contract documents.

### 4.2.3 General Fill Material

Fill and backfill to be used as general fill shall be material capable of being compacted to the requirements of Section 4.3.7.8 (b).

### 4.2.4 Structural Fill Material

- 4.2.4.1 Fill and backfill to be used as structural fill shall be gravel, sand, clay, or silt, or a mixture of these constituents capable of being compacted to requirements of Section 4.3.7.8 (a).
- 4.2.4.2 Except for sands or gravels that exhibit no plasticity characteristics, structural fill material shall be in accordance with the following requirements:
- a. Liquid limit – ~~40 maximum~~ 3
  - b. Plasticity index – ~~6 through 20~~ 4

### 4.2.5 Controlled Low-Strength Material (CLSM)

- 4.2.5.1 CLSM may be substituted for either structural fill material or general fill material, if approved by purchaser.
- 4.2.5.2 Mix design shall be proportioned to produce a 28-day compressive strength between 50 and 100 psi (0.3 and 0.7 MPa) for general fill and 100 and 200 psi (0.7 and 1.4 MPa) for structural fill, pre-tested using actual raw materials and approved by engineer of record before use on project.

#### **4.2.6 Impermeable Fill**

- 4.2.6.1 Earthen dikes, dams, or levees shall use fill material with hydraulic conductivity, liquid limit and plasticity index as specified in contract documents. Channel or pond linings shall have a minimum of 12 inches (300 mm) thick layer of compacted clay unless noted otherwise in contract documents.
- 4.2.6.2 Unless noted otherwise in design documents, hydraulic conductivity shall be measured in accordance with *ASTM D5084*.

### **4.3. Construction**

#### **4.3.1 Site Preparation**

##### **4.3.1.1 Clearing and Grubbing**

1. Clearing and grubbing shall consist of removal and disposal of trees, stumps, roots, vegetation, logs, rubbish, and other unsuitable material.
2. Except for trees and shrubs in areas designated in contract documents for preservation, areas designated for clearing and grubbing shall be cleared.
3. During construction operations, trees, shrubs, and other landscape features specifically designated in the contract documents for preservation shall be carefully protected from abuse, marring, or damage.
4. Trees and other vegetation outside the construction area shall not be damaged in any manner.
5. Trees, stumps, and other vegetation in the areas designated for clearing and grubbing shall be removed to the bottom of their root zone.
6. Depressions made by clearing and grubbing operations shall be filled in accordance with Section 4.3.7 and compacted to conform to the adjacent surface of the original ground.

##### **4.3.1.2 Stripping**

1. Before any soil is removed, the area shall be cleared of all debris.
2. Stripping shall consist of excavation, removal, and satisfactory disposal of all topsoil and soil containing organic material. Such stripped materials shall not be used as structural fill material under any circumstances.
3. Topsoil shall be removed to full-depth or as specified in contract documents.
4. Reusable materials shall be stockpiled as necessary for constructor's operations in areas approved by purchaser.

##### **4.3.1.3 Rough Grading**

1. General area grading shall be completed to within a tolerance of plus or minus 0.20 feet (60 mm) of elevations shown in contract documents but shall not be uniformly high or low.

2. Roads, parking areas, and building areas shall be excavated or filled to subgrade elevations shown in contract documents.
3. Rock encountered through cut sections shall be excavated to 1 foot (300 mm) below subgrade elevation and shall be backfilled to specified elevation.
4. If unsatisfactory field conditions caused by rain, inclement weather, or other circumstances prevent satisfactory performance of work, earthwork operations shall be suspended, and purchaser notified.
5. After completing grading operations and before grassing operations, graded areas that are not to be further improved shall be overlaid with topsoil of a compacted thickness of 4 inches (100 mm) minimum.

#### **4.3.2 Excavation**

##### **4.3.2.1 Structural Excavation**

1. Structural excavation shall include excavations for area paving, roadways, railways, foundations, grade beams, sumps, basements, retaining walls, manholes, catch basins, trenches, and all other in-ground and below-ground facilities, and areas to be used in the future to support structural loads as specified in contract documents.
2. Structural excavation shall be performed in accordance with contract documents to dimensions, grades, and elevations as noted and as required for formwork.
3. Overexcavation shall not be permitted unless otherwise specified in contract documents or approved by engineer of record.
4. Soils encountered at bottom of excavation elevation specified in contract documents which do not meet compaction requirements of Section 4.3.6.3 or 4.3.6.4 shall be removed and replaced with compacted structural fill or CLSM.

##### **4.3.2.2 Earthen Structures**

1. Earthen structures include, but are not limited to, ponds, canals, ditches, retention basins, levees, and dikes.
2. Excavation for earthen structures shall be made to the lines, grades, and cross sections as specified in contract documents.
3. Side slopes of excavations shall be cut and graded to specified cross section.
4. Unstable soil in the slopes shall be removed, and slopes repaired using material and methods in accordance with Sections 4.2 and 4.3.7.
5. Bottoms of excavations shall be graded to elevations and configurations as specified in contract documents.
6. Overexcavation shall be backfilled and compacted in accordance with Sections 4.2 and 4.3.7.



#### **4.3.2.3 Trenching**

1. Trenches are excavations made for placement of, but not limited to, underground piping, electrical cables, duct banks, geotextile anchoring, and drainage ditches.
2. Bottom of trenches shall be graded to the elevations as specified in the contract documents.
3. When applicable install shoring in advance of or simultaneously with trench excavation so that soils within full height of trench excavation walls will remain laterally supported at all times.
4. Unstable soil in bottom of trenches shall be removed and replaced using material and methods in accordance with Sections 4.2 and 4.3.7.
5. Overexcavation of trenches shall not be permitted unless otherwise specified in contract documents or approved by engineer of record.

#### **4.3.2.4 Rock Excavation**

1. Rock excavation shall consist of excavation of boulders or pieces of detached rock measuring 1 cubic yard (0.76 cubic meter) in volume or greater, or rock in ledges, bedded deposits, and conglomerate deposits so firmly cemented that they present all characteristics of solid rock, which cannot be excavated with earth moving, heavy equipment. All other excavation shall be earth excavation.
2. If blasting is not permitted, rock shall be excavated with mechanical rippers, mechanical breakers, or mechanical drills with non-explosive demolition agents.
3. ~~If blasting is permitted and required, blasting operations shall be managed in accordance with the rock blasting plan (see Section 4.1.8.3).~~
4. ~~If unexpected hard rock is encountered during the work, work shall be stopped until a blasting plan is developed or until owner provides specific direction.~~

#### **4.3.3 Stockpiling**

- 4.3.3.1 Material shall be stockpiled in a location specified by owner.
- 4.3.3.2 Stockpiles shall be placed, graded, and shaped for drainage.
- 4.3.3.3 Storage or stockpiling of material shall not be permitted on a completed subgrade.
- 4.3.3.4 Stockpiling of contaminated soils shall be in accordance with an owner approved contaminated soils management plan or as specified by owner.

#### **4.3.4 Drainage**

- 4.3.4.1 Drainage of cuts, excavations, fills, stockpiles, spoil areas, surcharge embankments, and borrow areas shall be maintained at all times to prevent ponding of surface water because of ground water or rainfall by providing temporary ditches, swales, culverts, and/or pumping systems as required in each respective site area.

- 4.3.4.2 Temporary drainage facilities shall be removed at completion of project or as specified by owner.
- 4.3.4.3 A temporary surface seal (e.g., sealing with a smooth drum roller) shall be constructed as required to prevent saturation during wet weather or temporary shutdown of operations.
- 4.3.4.4 Soil that becomes saturated shall be removed completely or reconditioned in accordance with Section 4.3.7.

#### **4.3.5 Disposal of Excess and Waste Materials**

- 4.3.5.1 If practicable, all suitable materials removed by excavation shall be used as fill.
- 4.3.5.2 Excavated material, in excess of that required for normal embankment construction, shall be stockpiled within construction limits or shall be placed in a designated spoil area beyond construction limits as specified by owner.
- 4.3.5.3 Material unsuitable for fill and debris, removed by clearing, grubbing, stripping, and excavation, shall be removed to a disposal area approved by owner.
- 4.3.5.4 Burning of combustible materials shall be performed only with approval of owner and only if permitted by local authorities.

#### **4.3.6 Preparation of Areas for Structural Fill or Loading**

- 4.3.6.1 Areas of structural excavation to receive structural fill or loading shall be free of frozen subgrade, roots, trash, snow, ice, or other deleterious material.
- 4.3.6.2 Areas shall be prepared for structural fill or loading as follows:
  - a. Drained of standing water
  - b. Proof-rolled by crossing the area repeatedly and methodically with a 10-ton (9-tonne) minimum weight pneumatic tire compactor or a fully loaded dump truck. See *PIP CVS02350* for proof-rolling requirements for roadways and area paving.
  - c. If proof-rolling demonstrates ruts between 1 and 2 inches (25 and 50 mm) deep after localized soft spots have been repaired, the top 6 inches (150 mm) of the overall area shall be scarified and re-compacted. For areas where ruts exceed 2 inches deep, the top 12 inches (300 mm) shall be scarified and re-compacted.
  - d. For enclosed areas or tightly spaced areas, if access by proof rolling equipment is limited, hand operated rollers or plate compactors may be used if approved by owner.
  - e. In accordance with any other requirements specified in contract documents including but not limited to overexcavation, moisture conditioning and re-compacting of the upper soils, and chemical stabilization or other methods of improving soil conditions.

- 4.3.6.3 Density of the top 6 inches (150 mm) in areas for structural fill or loading shall not be less than 90% of the maximum Modified Proctor density in accordance with *ASTM D1557*, or 95% of maximum Standard Proctor density in accordance with *ASTM D698*.
- 4.3.6.4 Density of the top 6 inches (150 mm) in areas of structural fill or loading, where granular soils exist that do not exhibit well-defined moisture-density relationship, shall be compacted to at least 80% relative density in accordance with *ASTM D4253* and *ASTM D4254*.

#### **4.3.7 Filling and Backfilling**

- 4.3.7.1 Unless otherwise specified in contract documents, the following areas shall be filled or backfilled using structural fill:
  - a. For foundations that require fill for subgrade improvement or to raise elevation, directly beneath and 3 feet (1meter) beyond perimeter of foundations.
  - b. Beneath slabs, roadways, railroads, area pavement, and parking areas directly beneath and 3 feet (1meter) beyond the perimeter of improved area.
- 4.3.7.2 All other areas not designated above may be filled or backfilled using general fill, unless otherwise specified in contract documents.
- 4.3.7.3 Before placement of structural fill or backfill, the area to receive fill shall be prepared in accordance with Section 4.3.6.
- 4.3.7.4 Compacting shall begin only after fill or backfill has been properly placed and material is at the specified moisture content.
- 4.3.7.5 When air temperature is below freezing, earth fill shall not be placed on frozen soil. Earth fill shall be free draining and be placed at temperatures above 35° F (2° C).
- 4.3.7.6 Unless otherwise specified in contract documents, material shall be placed in loose lifts not exceeding the following criteria, provided that the specified compaction is achieved for the full depth:
  - a. Structural fill shall be placed in lifts of ~~8 inches (200 mm)~~ **5** maximum in loose depth.
  - b. General fill shall be placed in lifts of 12 inches (300 mm) maximum in loose depth.
  - c. General and structural fill materials placed as backfill and compacted with hand-operated equipment shall be placed in lifts of 4 inches (100 mm) maximum in loose depth unless otherwise approved by purchaser.
- 4.3.7.7 Compaction shall be performed with equipment compatible with soil type.
- 4.3.7.8 Unless otherwise specified in contract documents, fill and backfill layers shall be uniformly compacted in accordance with the following density and moisture content requirements:

- a. Structural Fill Compaction Densities
    - (1) Structural fill shall be compacted to at least 90% of maximum Modified Proctor density in accordance with *ASTM D1557*, or 95% of maximum Standard Proctor density in accordance with *ASTM D698*.
    - (2) Granular soil used as structural fill that does not exhibit well-defined moisture-density relationship shall be compacted to at least 80% relative density in accordance with *ASTM D4253* and *ASTM D4254*.
  - b. General Fill Compaction Densities
    - (1) General fill shall be compacted to at least 85% of maximum Modified Proctor density in accordance with *ASTM D1557*, or 90% of the maximum Standard Proctor density in accordance with *ASTM D698*.
    - (2) Granular soil used as general fill that does not exhibit well-defined moisture-density relationship shall be compacted to 70% to 75% relative density in accordance with *ASTM D4253* and *ASTM D4254*.
  - c. Moisture content of material being compacted shall be within ~~plus or minus 3%~~ 6 of the optimum moisture content in accordance with applicable *ASTM D1557* or *ASTM D698*. Fill materials shall be conditioned as necessary to achieve required moisture content, without additional cost to purchaser.
  - d. Chemical stabilization may be used provided the engineer of record approves modifications necessary to obtain satisfactory compaction.
- 4.3.7.9 Topsoil shall be placed, leveled to grade and lightly rolled to produce a firm surface suitable for landscape purposes.
- 4.3.7.10 Compaction by water jetting or flooding shall not be permitted.
- 4.3.7.11 Fill and backfill adjacent to structures (e.g., retaining walls, pits, and basements) shall not be compacted with heavy equipment, but with hand-operated equipment to a distance of 4 feet (1.2 meters) or greater beyond the sides of the structures.
- 4.3.7.12 To prevent unnecessary eccentric loading on a structure or foundation, every effort shall be made to place backfill materials symmetrically and in uniform layers.
- 4.3.7.13 Unless otherwise permitted by purchaser, backfill around or over cast-in-place concrete shall not be permitted until the concrete has attained 75% of its specified strength.
- 4.3.7.14 Compacted surfaces of fill and backfill shall be finish-graded to cross sections, lines, grades, elevations and tolerances specified in contract documents.
- 4.3.7.15 Where specified by the contract documents, utility warning/marketing tape shall be placed continuous during backfill over the utility.

#### **4.3.8 Installation of Base Course**

- 4.3.8.1 Base course for roads, parking areas, and other areas to be surfaced shall be prepared in accordance with this section and *PIP CVS02350*.
- 4.3.8.2 The existing ground to the toe of fill slopes shall be cleared, grubbed, and stripped in accordance with Sections 4.3.1.1 and 4.3.1.2.
- 4.3.8.3 Excavation of areas in cut shall be in accordance with Section 4.3.2.
- 4.3.8.4 Backfill of base course shall be in accordance with Sections 4.3.6 and 4.3.7, with the following exceptions:
  - a. Compaction shall be to at least 95% of the maximum Modified Proctor density in accordance with *ASTM D1557*, or 100% of maximum Standard Proctor density in accordance with *ASTM D698*.
  - b. If base course materials are clean granular material, compaction shall be to 85% of relative density in accordance with *ASTM D4253* and *ASTM D4254*.
- 4.3.8.5 Geosynthetic materials shall be installed in accordance with manufacturer's written instructions and/or as specified in the contract documents.
- 4.3.8.6 Compacted base course shall be shaped to a smooth and even surface, free of voids, and to the required elevation.
- 4.3.8.7 Deviation greater than 1/2 inch (12 mm) in cross section or 1/2 inch (12 mm) in length as measured with a 16-foot (5-meter) straightedge shall be corrected by loosening, adding, or removing material and then reshaping and re-compacting by sprinkling and rolling.
- 4.3.8.8 Base course shall be maintained in a smooth, true-to-grade, compacted condition until it is covered by other construction.

#### **4.3.9 Dewatering**

- 4.3.9.1 All dewatering methods and disposal of water shall be approved by owner.
- 4.3.9.2 If required for construction, before excavation, an approved dewatering system shall be installed and operated when necessary to lower the groundwater.
- 4.3.9.3 Design of dewatering system shall be the responsibility of constructor.
- 4.3.9.4 Constructor shall be responsible for any effects of dewatering on adjacent facilities.
- 4.3.9.5 Surface water shall be prevented from flowing into excavations by installing ditches, trenches, protective swales, pumps, or other purchaser approved measures.
- 4.3.9.6 All non-contaminated water shall be diverted or pumped to existing drainage system.
- 4.3.9.7 Excavations for foundations and other underground installations shall not be used as temporary drainage ditches.



**ADDENDUM**  
**TO**  
**PROCESS INDUSTRY PRACTICE SPECIFICATION**

This Process Industry Practice Specification has been modified for this project. Sections of the Process Industry Practice Specification that are deleted are depicted with a strikeout in the body of the specification. Additions to the Process Industry Practice Specification are depicted with a boxed number, #, directing the user to this addendum.

Incorporate the following additions into the project specifications:

1. No blasting will be permitted.
2. 1.5 inches (38 mm)
2. 30 maximum
3. 10 through 20
4. 6 inches (150 mm)
5. plus or minus 2%



DEPARTMENT OF THE ARMY  
U.S. ARMY CORPS OF ENGINEERS, NEW ORLEANS DISTRICT  
7400 LEAKE AVENUE  
NEW ORLEANS, LOUISIANA 70118

July 7, 2023

Regulatory Division  
Eastern Evaluation Branch

SUBJECT: Final Determination of Eligibility under GP-22  
MVN-2023-00409-EDM

ADM  
c/o Lanier and Associates Engineers  
Attn: John Maurin  
4101 Magazine Street  
New Orleans, Louisiana 70115

Dear Mr. Maurin,

This letter constitutes a Final Determination of Eligibility. The final determination is as follows:

- a. The proposed work, to place additional pilings for dock support and disposal of dredged material in the Mississippi River, Mile Point 139, 2154 Highway 44, Reserve, Saint John the Baptist Parish, Louisiana as shown on the attached drawings, is authorized under GP-22 provided that all conditions of the permit are met.
- b. Prior to commencing work on your project, the permittee must obtain approvals from state and local agencies as required by law and by terms of this permit.
- c. The permittee is advised of the requirements set forth in the attached Memorandum for Record and the associated special conditions. All responsibilities and compliance related to the subject conditions are hereby directed to and have oversight by the USACE Navigation Office, Operations Manager, ODB, Michelle Kornick, with this District. Should you have any questions on the requirements and restrictions stipulated, you shall contact the Assistant Operations Manager, ODB, Heather Jennings, who may be reached at 504-862-1253 or [Heather.L.Jennings@usace.army.mil](mailto:Heather.L.Jennings@usace.army.mil).
- d. Permittee must comply with the enclosed: "Standard Manatee Conditions for In-Water Activities".
- c. Permittees that discover any previously unknown historic, cultural, or archeological remains and artifacts while accomplishing the permitted activity must immediately notify the New Orleans District Corps of Engineers, Regulatory Branch (CEMVN) district engineer, halt all construction activity at the location of discovery, and avoid construction activities within a fifty 50-foot buffer zone of the location of discovery until the required coordination has been completed. The district engineer will initiate the Federal, Tribal, and state coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

d. If abandoned cemeteries, unmarked graves, or human remains are discovered during the permitted activity, the permittee will stop work immediately and comply with the Louisiana Unmarked Human Burial Sites Preservation Act (La. R.S. 8:671 et seq.). The permittee will notify local law enforcement, CEMVN, and the Louisiana Division of Archaeology (LDOA), within the Louisiana Department of Culture, Recreation and Tourism, Office of Cultural Development, by telephone at 225-342-8170 to assess the nature and age of the human skeletal remains within twenty-four (24) hours of the discovery of unmarked human remains and will accompany local law enforcement personnel during all field investigations. If the appropriate local law enforcement official determines that the remains are not a crime scene, and the remains are more than 50 years old, LDOA has jurisdiction over the remains. In no instance will human remains be removed from the discovery site until jurisdiction is established. In cases where the LDOA assumes jurisdiction and the remains are determined to be American Indian, LDOA will consult with Tribes, the district engineer, and the permittee to determine the appropriate course of action.

This approval to perform work is valid for 5 years from the date of this letter.

Permittee is aware that this office may re-evaluate its decision on this permit at any time the circumstances warrant.

Should you have any further questions concerning this matter, please contact Damon Morse at (504) 862-2041 or [damon.morse@usace.army.mil](mailto:damon.morse@usace.army.mil).

Sincerely,

for  
Martin S. Mayer  
Chief, Regulatory Division

Enclosures



MEMORANDUM FOR RECORD: Chief, Regulatory Division

SUBJECT: MFR IN ACCORDANCE WITH EC 1165-2-220, APPENDIX G – ADM,  
MVN-2023-00409-EDM (2023-0064)

1. The Operations Manager for Mississippi River, Baton Rouge to the Gulf navigation project (ODB) and the Operations Manager for Completed Works (ODS-W) have reviewed the application by Lanier & Associates obo ADM to install 35 pipe piles to support an existing dock structure along the left descending bank of the Mississippi River, vicinity of river mile 139 AHP (levee station 4591+87), at Reserve, Louisiana in St. John the Baptist Parish.
2. It has been determined that the subject application is within the Mississippi River navigation servitude but is outside of the navigation fairway limits. Therefore, this request has no impact to the usefulness of the project and will not be injurious to the public interest. The scope of this analysis for Section 408 evaluation is limited to the federal limits of the Federal Navigation Channel and the MR&T Federal Channel Stabilization Revetment Project.
3. Operations Division has no objections to the subject request provided the following conditions are included as part of the Section 10 permit documents as per EC 1165-2-220, APPENDIX K (enclosed):

PROJECT- SPECIFIC CONDITIONS:

- a. There shall be no unreasonable interference with navigation by the existence or use of the activity authorized herein.
- b. The proposed bank degrading work is performed and completed while the stage of the Mississippi River is below elevation +11 feet on the Carrollton gage, at New Orleans, Louisiana. If the degrading work is not completed prior to the stage of the river exceeding +11 feet on the Carrollton gage, then the applicant must cease all degrading work at the direction of the Corps of Engineers.
- c. Proposed bank degrading to elevation +12, extending landward 71 feet with a 1V:4H backslope to existing ground shall be performed prior to any other work in the area. Surveys of the degrading shall be conducted by a registered land surveyor and submitted for review prior to any other work being performed.
- d. No piles are driven when the stage of the Mississippi River is above +15 feet on the Carrollton gage, at New Orleans, Louisiana. If the subsurface work is not completed prior to the river exceeding this stage, then the applicant must cease all subsurface work at the direction of the Corps of Engineers.
- e. Heavy equipment greater than HS-20 loading (72,000lbs) is not allowed over the levee or in the batture without an approved stability analysis.
- f. Riprap is placed around all piles that penetrate through the revetment in accordance with the Corps of Engineers standard drawing, "Repair Procedures Required When Penetrating Revetments With Piles, Caissons and/or Pile Clusters", file No. H-18-45204.

- g. The barges are moored in such a manner as not to damage the existing batture tree screen, revetment, or encroach within 100 feet of the riverside levee toe, under any river conditions.
  - h. The applicant does not spud or anchor into the existing revetment. Any damage is limited to only driving those piles necessary to complete the work.
  - i. The barges maintain a minimum of three feet of clearance over the underwater revetment during any riverstage.
  - j. Any damage to the revetment resulting from applicant's activities shall be repaired in accordance with USACE guidelines at the applicant's expense.
  - k. If the authorized project, or future maintenance work, involves the use of floating construction equipment (barge mounted cranes, barge mounted pile driving equipment, floating dredge equipment, dredge discharge pipelines, etc.) in the waterway, you are advised to notify the Eighth Coast Guard District so that a Notice to Mariners, if required, may be prepared. Notification with a copy of your permit approval and drawings should be emailed to: [D8MarineInfo@uscg.mil](mailto:D8MarineInfo@uscg.mil), or mailed to the Commander (dpw), Eighth Coast Guard District, Hale Boggs Federal Building, 500 Poydras Street, Room 1230, New Orleans, Louisiana 70130, about 1 month before you plan to start work. Telephone inquiries can be directed to the Eighth Coast Guard District, Waterways Management at (504) 671-2118.
  - l. The applicant will, at his or her expense, install and maintain any safety light, signals, and signs prescribed by the United States Coast Guard, through regulations or otherwise, on authorized facilities or on equipment used in performing work under the authorization.
  - m. The above Section 408 special conditions and standard conditions enclosed are enforceable by the USACE Navigation Manager for the Mississippi River, Baton Rouge to the Gulf of Mexico and/or USACE Operations Manager, Completed Works, as per Appendix G, EC 1165-2-220. The point of contact for enforcing such Section 408 conditions in the Section 10 permit is Heather Jennings, 504-862-1253, [Heather.L.Jennings@usace.army.mil](mailto:Heather.L.Jennings@usace.army.mil) and Amy E. Powell, 504-862-2241, [Amy.E.Powell@usace.army.mil](mailto:Amy.E.Powell@usace.army.mil).
4. If there are any questions regarding these conditions, please contact Heather Jennings at 504-862-1253.

for Michelle Kornick  
Operations Manager  
Operations Division

Enclosure (Standard 408 conditions)

**U.S. Army Corps of Engineers**  
**New Orleans District**  
**Section 408**  
**EC-1165-2-220 Appendix K**  
**Standard Terms and Conditions**

#### LIMITS OF THE AUTHORIZATION

1. This permission only authorizes you, the requester, to undertake the activity described herein under the authority provided in Section 14 of the Rivers and Harbors Act of 1899, as amended (33 USC 408). This permission does not obviate the need to obtain other federal, state, or local authorizations required by law. This permission does not grant any property rights or exclusive privileges, and you must have appropriate real estate instruments in place prior to construction and/or installation.
2. The time limit for completing the work authorized end on 5 years from the date of the Regulatory permit if a Regulatory permit is required. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.
3. Without prior written approval of the USACE, you must neither transfer nor assign this permission nor sublet the premises or any part thereof, nor grant any interest, privilege or license whatsoever in connection with this permission. Failure to comply with this condition will constitute noncompliance for which the permission may be revoked immediately by USACE.
4. The requester understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration of the work herein authorized, or if, in the opinion of the Secretary of the Army or an authorized representative, said work will cause unreasonable conditions and/or obstruction of USACE project authorized design, the requester will be required upon due notice from the USACE, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim can be made against the United States on account of any such removal or alteration.

#### INDEMNIFICATION AND HOLD HARMLESS

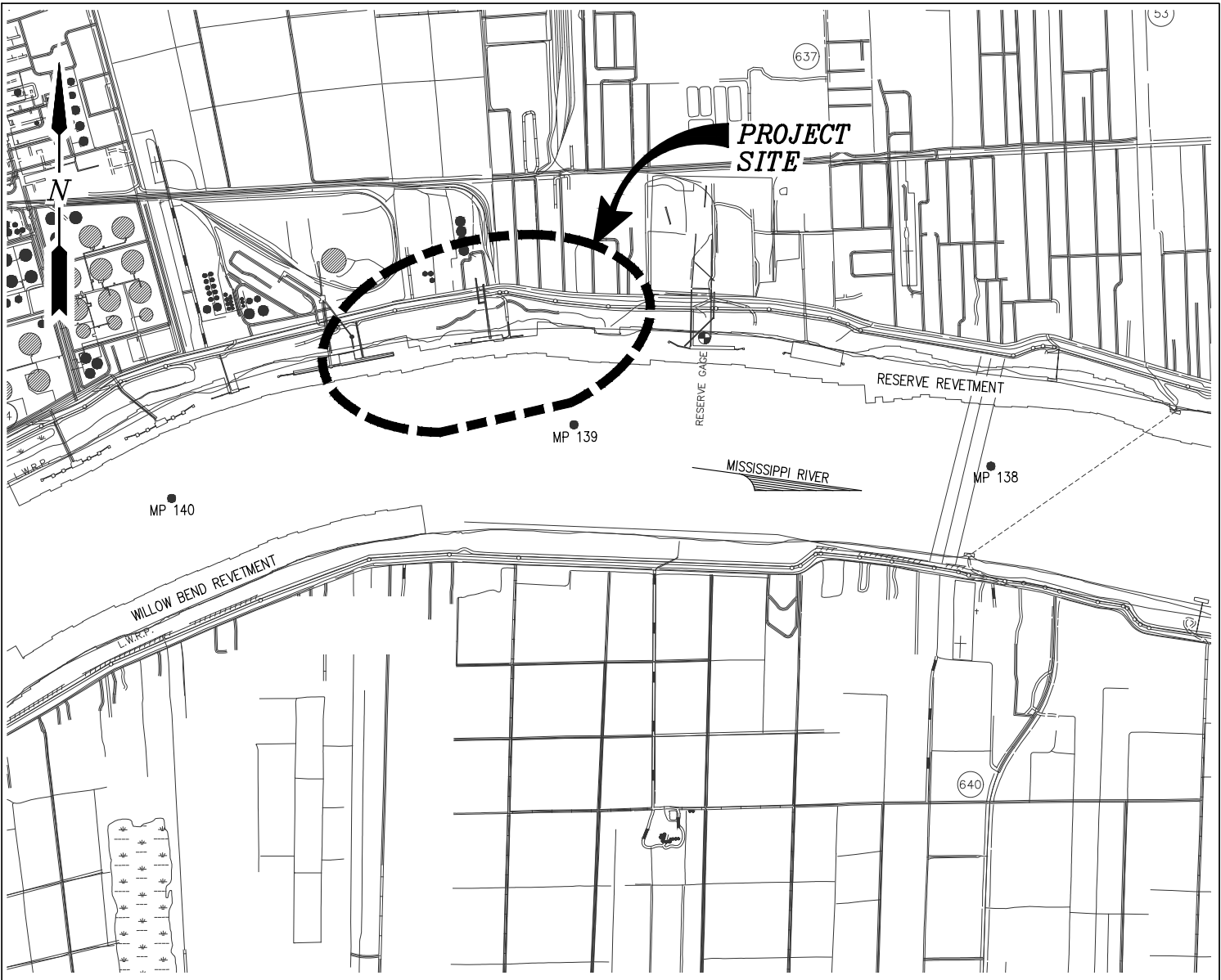
5. The United States will in no case be liable for:
  - a. Any damage or injury to the structures or work authorized by this permission that may be caused or result from future operations undertaken by the United States, and no claim or right to compensation will accrue from any damage; or
  - b. Damage claims associated with any future modification, suspension, or revocation of this permission.
6. The United States will not be responsible for damages or injuries which may arise from or be incident to the construction, maintenance, and use of the project requested by you, nor for damages to the property or injuries to your officers, agents, servants, or employees, or others who may be on your premises or project work areas of the federal project(s) rights-of-way. By accepting this permission, you hereby agree to fully defend, **indemnify** and **hold harmless** the United States and USACE from any and all such claims, subject to any limitations in law.
7. Any damage to the water resources development project or other portions of any federal project(s) resulting from your activities must be repaired at your expense.

## REEVALUATION OF PERMISSION

8. The determination that the activity authorized by this permission would not impair the usefulness of the federal project and would not be injurious to the public interest was made in reliance on the information you provided.
9. This office, at its sole discretion, may reevaluate its decision to issue this permission at any time circumstances warrant, which may result in a determination that it is appropriate or necessary to modify or revoke this permission. Circumstances that could require a reevaluation include, but are not limited to, the following:
  - a. You fail to comply with the terms and conditions of this permission;
  - b. The information provided in support of your application for permission proves to have been inaccurate or incomplete; or
  - c. Significant new information surfaces which this office did not consider in reaching the original decision that the activity would not impair the usefulness of the water resources development project and would not be injurious to the public interest.

## CONDUCT OF WORK UNDER THIS PERMISSION

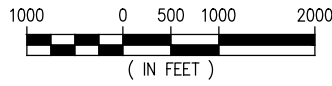
10. You are responsible for implementing any requirements for mitigation, reasonable and prudent alternatives, or other conditions or requirements imposed as a result of environmental compliance.
11. Work/usage allowed under this permission must proceed in a manner that avoids interference with inspection, operation, and maintenance of the federal project.
12. In the event of any deficiency in the design or construction of the requested activity, you are solely responsible for taking remedial action to correct the deficiency.
13. The right is reserved to the USACE to enter upon the premises at any time and for any purpose necessary or convenient in connection with government purpose, to make inspections, to operate and/or to make any other use of the lands as may be necessary in connection with government purposes, and you will have no claim for damages on account thereof against the United States or any officer, agent or employee thereof.
14. You must provide copies of pertinent design, construction, and/or usage submittal/documents. USACE may request that survey and photographic documentation of the alteration work and the impacted project area be provided before, during, and after construction and/or installation.
15. You may be required to perform an inspection of the federal project with the USACE, prior to your use of the structure, to document existing conditions.
16. USACE shall not be responsible for the technical sufficiency of the alteration design nor for the construction and/or installation work.



**AREA MAP**

**VICINITY MAP**

SCALE: 1"=2000'



PARISH: ST. JOHN THE BAPTIST  
 LAT: 30° 03' 16"  
 LONG: 90° 34' 41"

**NOTES**

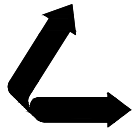
1. AS-BUILT DRAWINGS AND/OR PLANS SHALL HAVE WRITTEN ON THEM THE DATE OF COMPLETION OF SAID ACTIVITIES AND SHALL BE SUBMITTED TO THE LOUISIANA DEPARTMENT OF NATURAL RESOURCES, OFFICE OF COASTAL MANAGEMENT, P.O. BOX 44487, BATON ROUGE, LA 70804-4487 WITHIN 30 DAYS FOLLOWING PROJECT COMPLETION.
2. ALL STRUCTURES, FACILITIES, WELL AND PIPELINES/FLOWLINES OCCURRING IN OPEN WATER AREAS OR IN OILFIELD CANALS OR SLIPS SHALL BE REMOVED WITHIN 120 DAYS OF ABANDONMENT OF THE FACILITIES FOR THE HEREIN PERMITTED USE UNLESS PRIOR WRITTEN APPROVAL TO LEAVE SUCH STRUCTURES IN PLACE IS RECEIVED FROM THE COASTAL MANAGEMENT DIVISION. THIS CONDITION DOES NOT PRECLUDE THE NECESSITY FOR REVISING THE CURRENT PERMIT OR OBTAINING A SEPARATE COASTAL USE PERMIT, SHOULD ONE BE REQUIRED.
3. STRUCTURES MUST ALSO BE MARKED/LIGHTED IN ACCORDANCE WITH U.S. COAST GUARD REGULATIONS.
4. IN ORDER TO ENSURE THE SAFETY OF ALL PARTIES, THE PERMITEE SHALL CONTACT THE LOUISIANA ONE CALL SYSTEM (1-800-272-3020) A MINIMUM OF 48 HOURS PRIOR TO THE COMMENCEMENT OF ANY EXCAVATION (DIGGING, DREDGING, JETTING, ETC.) OR DEMOLITION ACTIVITY.

J:\110005\11832 ADM RESERVE CONCRETE DOCK DAMAGE DRAWINGS\PERMIT\11832-P1.DWG

ALLISON GAINES, P.E.  
 LA PE #40393

**PRELIMINARY - FOR PERMIT PURPOSES ONLY**

REV  
 B



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 CONSULTING ENGINEERS  
 INCORPORATED  
 LA: EF-1120 TX: F-2981  
 NEW ORLEANS • BEAUMONT • CORPUS CHRISTI • HOUSTON

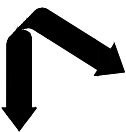
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			DESIGN AKG
			DRAWN SWF
			CHECK JDM
			JOB NO 11832
			SHEET No.
			1 OF 7

**PROPOSED DOCK REPAIRS  
 VICINITY MAP, AREA MAP, & NOTES**

ALLISON GAINES, P.E.  
LA PE #40393

PRELIMINARY - FOR PERMITTING PURPOSES ONLY, NOT FOR CONSTRUCTION

REV  
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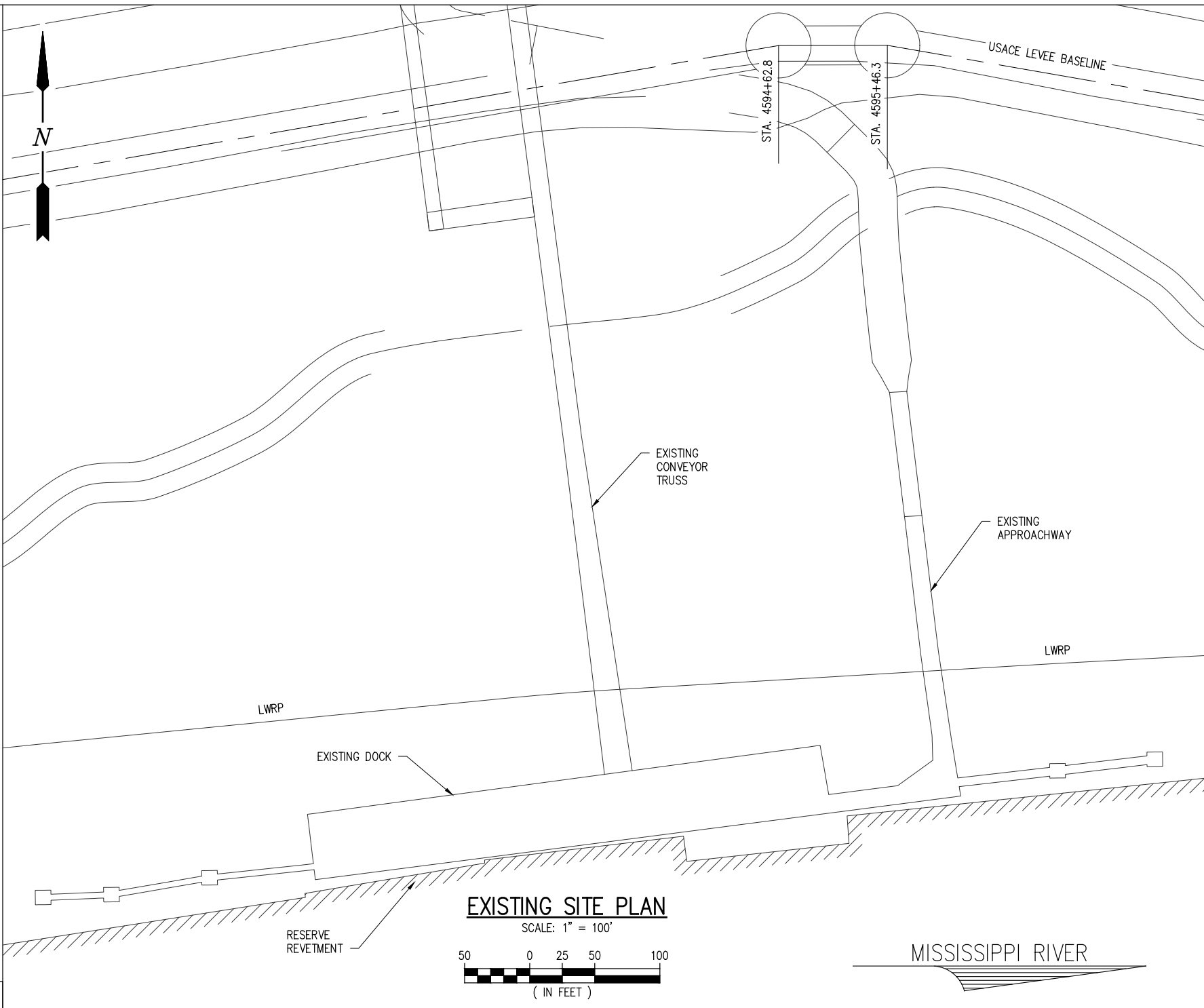
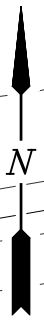
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RESERVE

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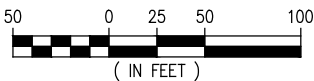
LOUISIANA

**DOCK REPAIRS  
EXISTING SITE PLAN**



**EXISTING SITE PLAN**

SCALE: 1" = 100'



MISSISSIPPI RIVER



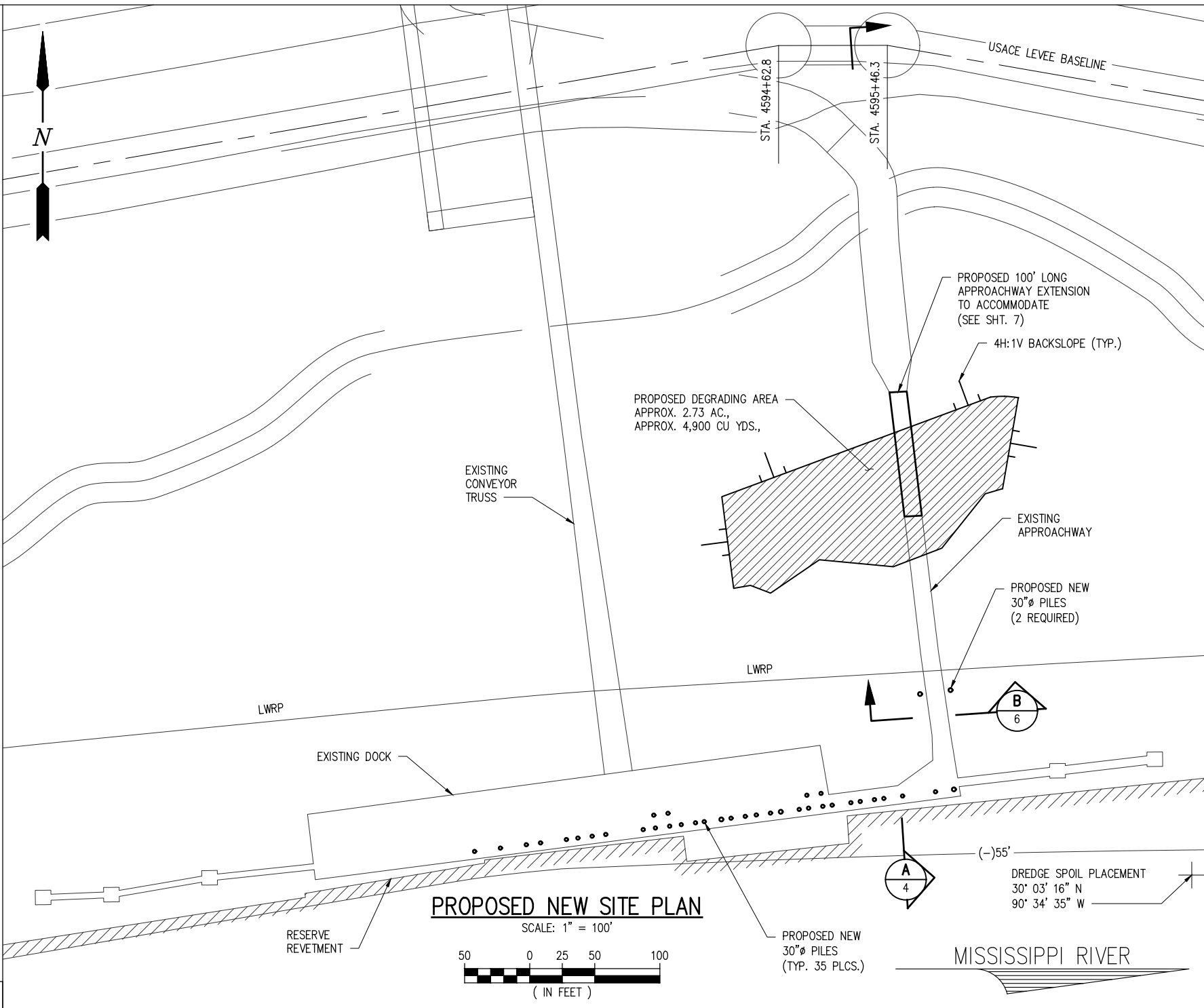
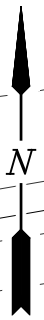
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ALLISON GAINES, P.E.  
LA PE #40393

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REV B



RESERVE

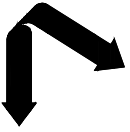
**ADM**

LOUISIANA

**DOCK REPAIRS**

**PROPOSED NEW SITE PLAN**

DATE	DEC 2022
DESIGN	AKG
DRAWN	SJF
CHECK	LDM
JOB NO.	11832
SHEET No.	3 OF 7



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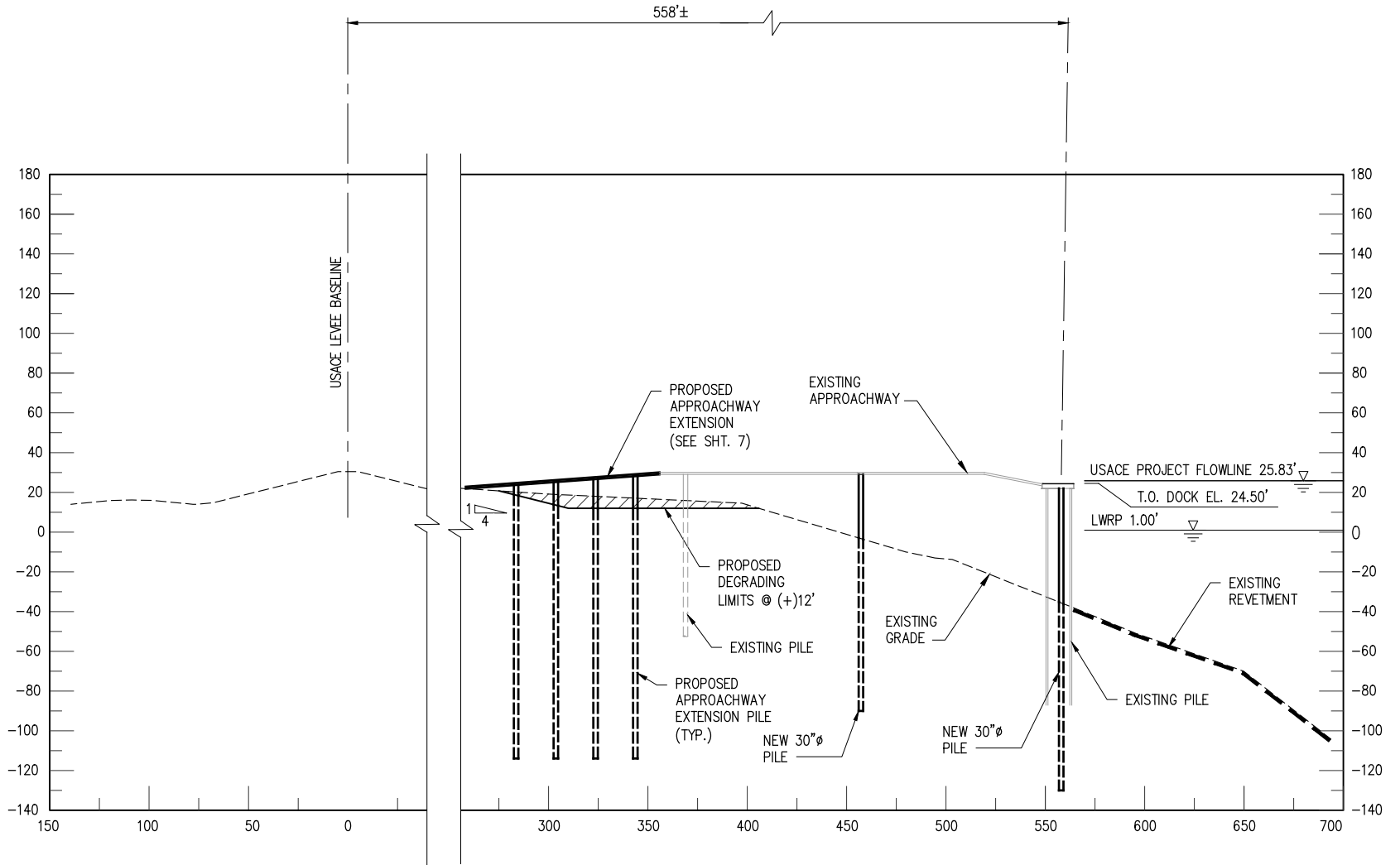
ADM

LOUISIANA

**PROPOSED DOCK REPAIRS**  
**CROSS-SECTION**

DATE DEC 2022  
 DESIGN AKG  
 DRAWN SIF  
 CHECK JDM  
 JOB NO 11832  
 SHEET No. 4 OF 7

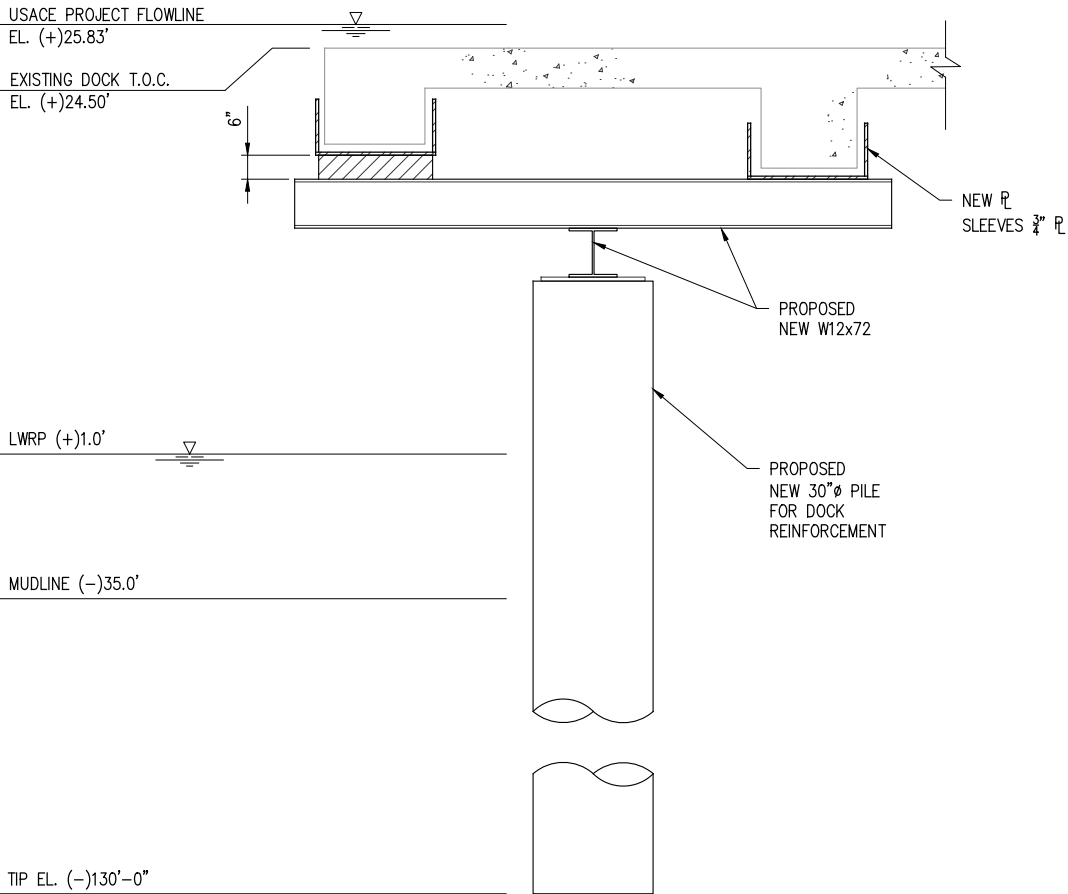
REV B



**SECTION A**  
 SCALE: 1" = 80'







**PROPOSED NEW PILE DETAIL**

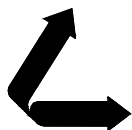
SCALE: 1/4" = 1'-0"

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LA PE #40393

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**ADM**

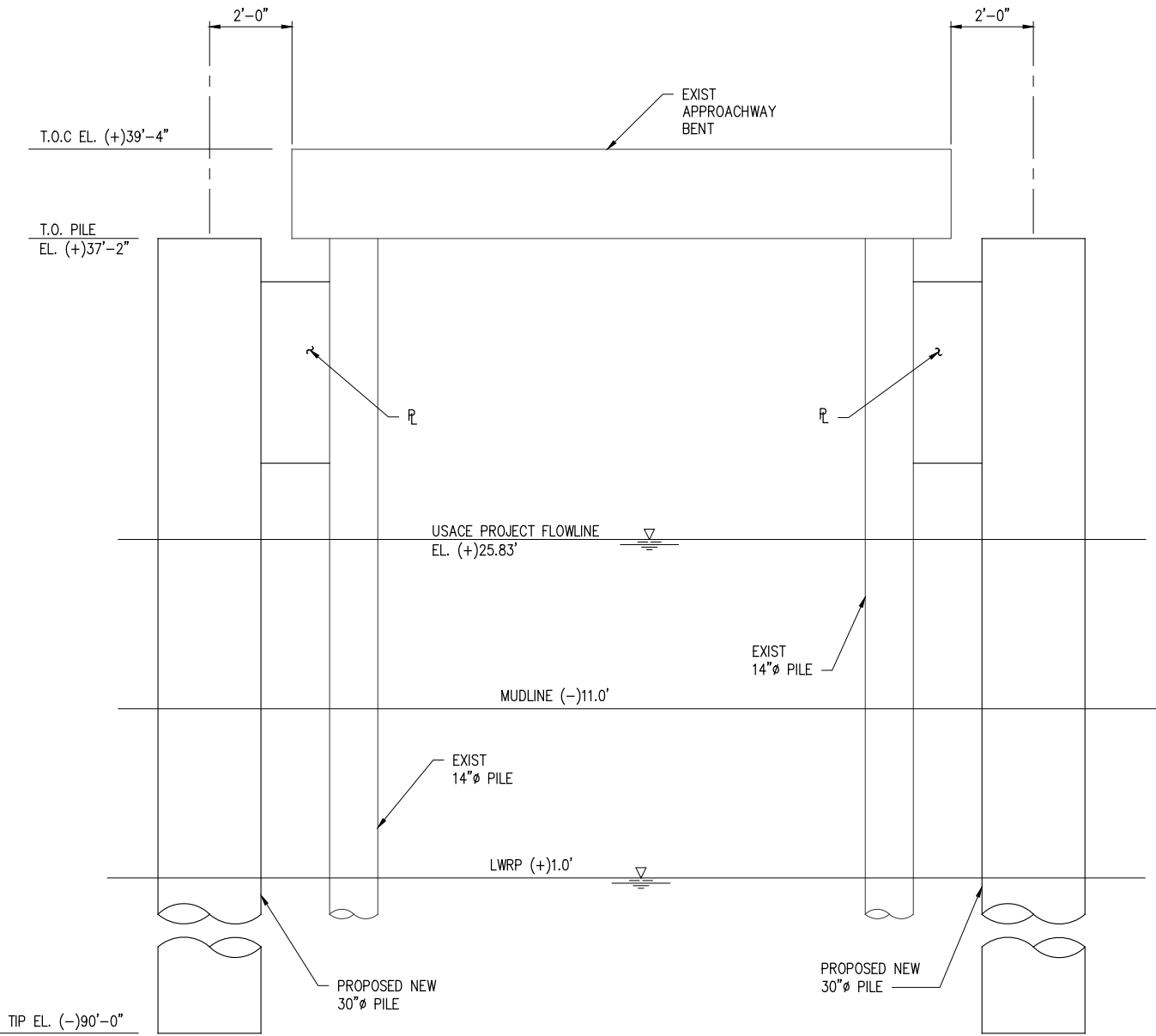
LOUISIANA

**PROPOSED DOCK REPAIRS**  
**PROPOSED PILE DETAIL**

DATE DEC 2022  
DESIGN AKG  
DRAWN SWF  
CHECK JDM  
JOB NO 11832  
SHEET No.

5 OF 7

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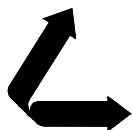
### PROPOSED APPROACHWAY REPAIR

SECTION B  
 SCALE: 1/4" = 1'-0" 3

ALLISON GAINES, P.E.  
LA PE #40393

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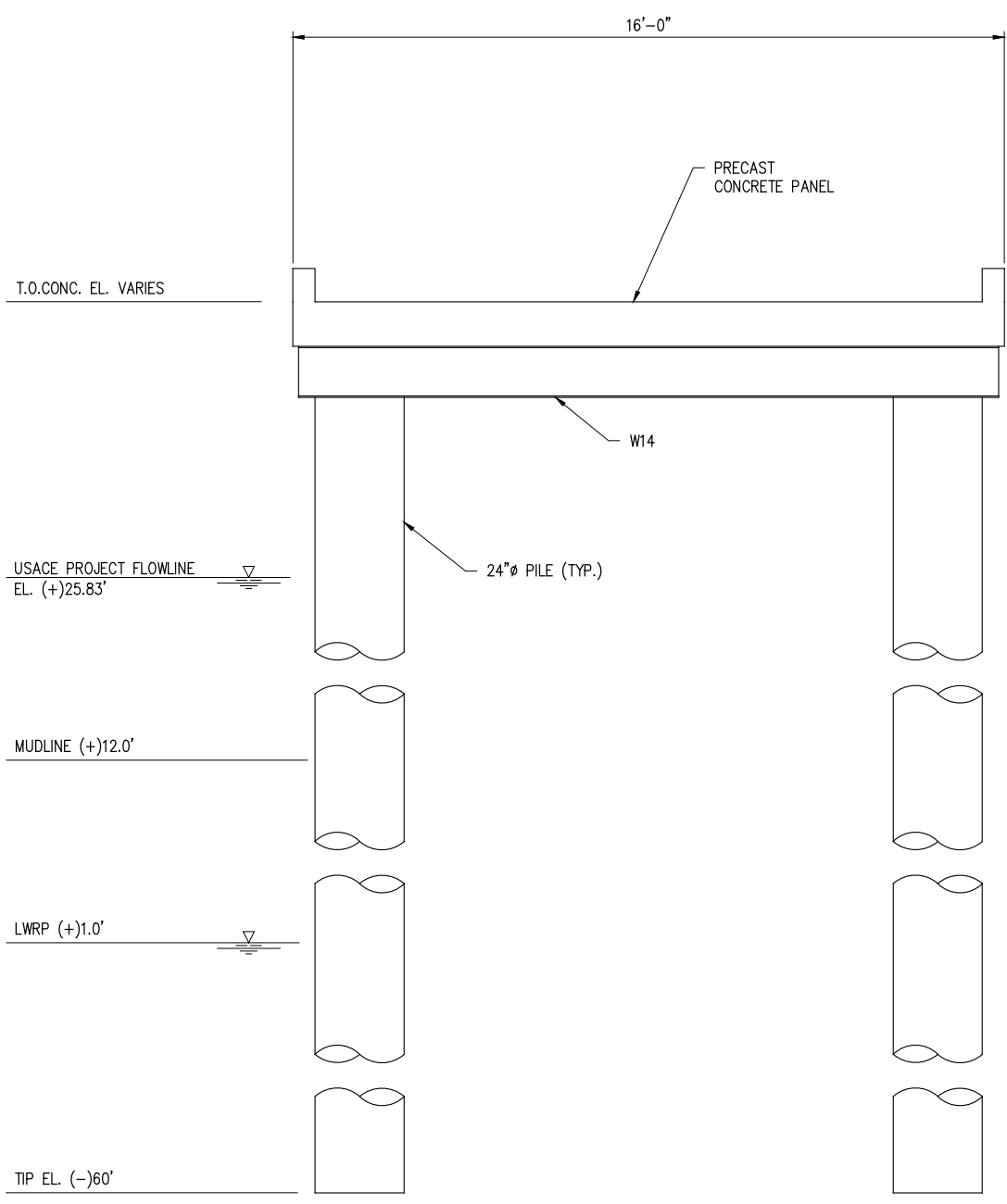
**ADM**

LOUISIANA

**PROPOSED DOCK REPAIRS**  
**PROPOSED PILE DETAILS**

DATE DEC 2022  
 DESIGN AKG  
 DRAWN SWF  
 CHECK JDM  
 JOB NO 11832  
 SHEET No.

6 OF 7



**TYPICAL SECTION AT APPROACHWAY EXTENSION**

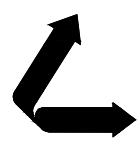
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ALLISON GAINES, P.E.  
LA PE #40393

**PRELIMINARY - FOR PERMIT PURPOSES ONLY**

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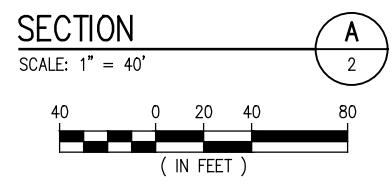
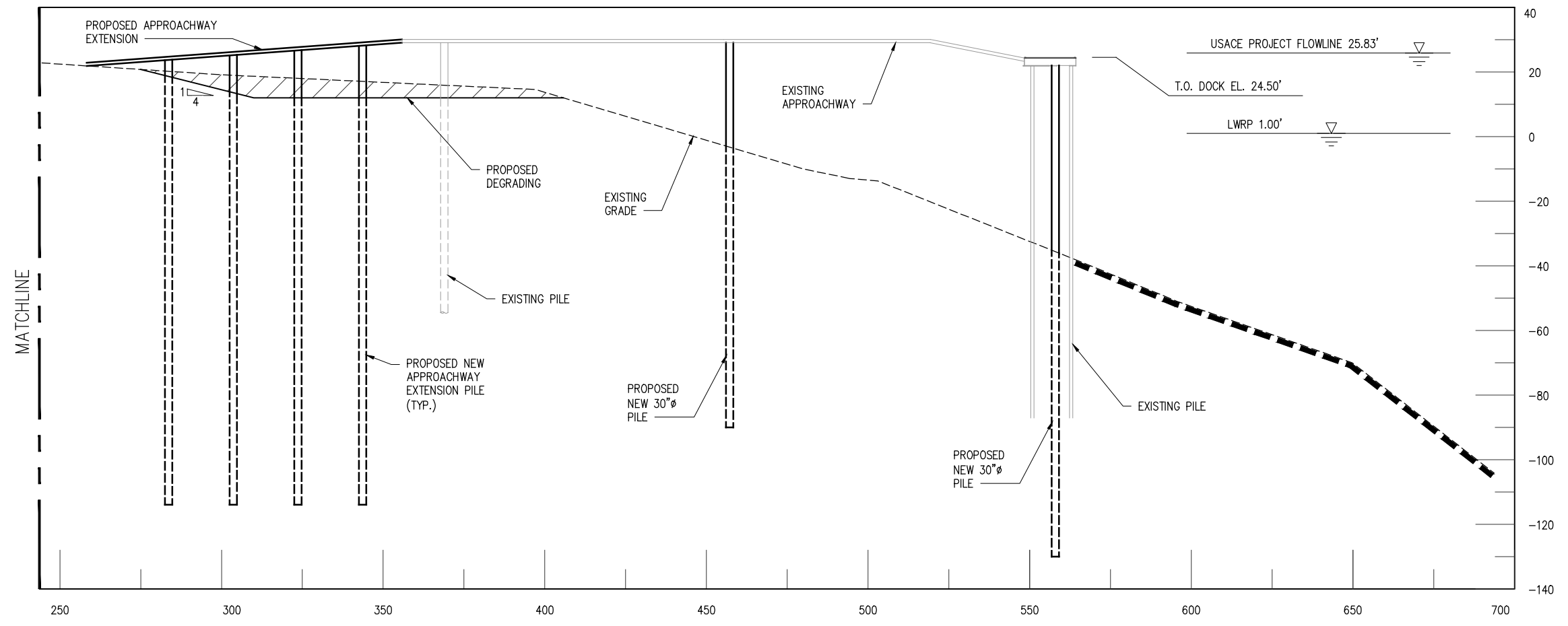
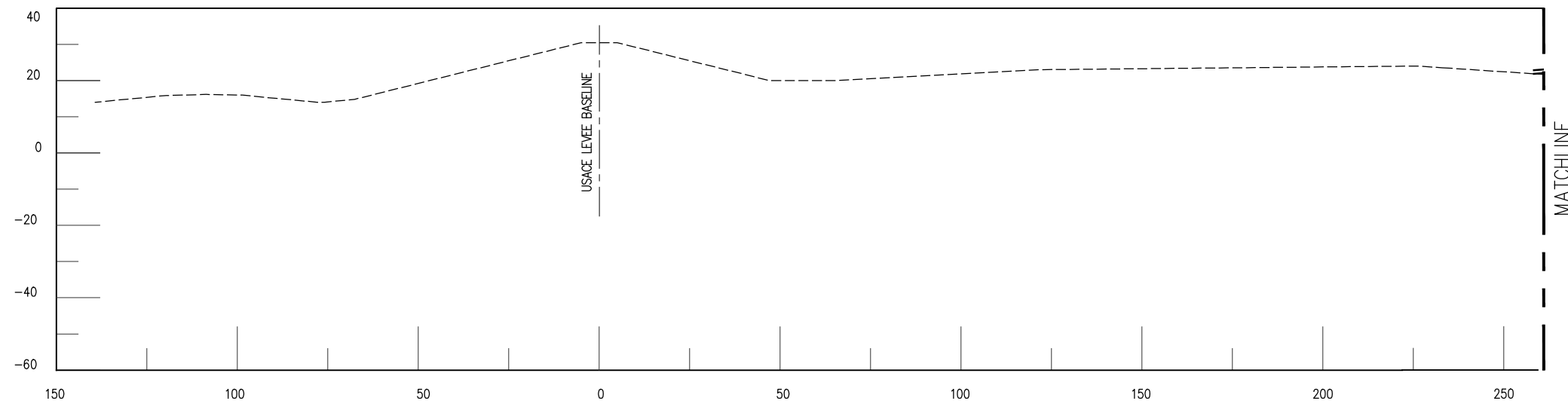


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INCORPORATED  
LA: EF-1120 TX: F-2981  
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RESERVE **ADM** LOUISIANA

**PROPOSED DOCK REPAIRS**  
**SECTION AT APPROACHWAY EXTENSION**

DATE DEC 2022  
DESIGN AKG  
DRAWN SWF  
CHECK JDM  
JOB NO 11832  
SHEET No.  
7 OF 7



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INCORPORATED  
LA: EF-1120 TX: F-2981  
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REV	DATE	BY	DESCRIPTION	REV	DATE	BY	DESCRIPTION

ALLISON GAINES, P.E.  
LA PE #40393

**PRELIMINARY - FOR PERMIT PURPOSES ONLY**

DATE DEC. '22  
SHT SIZE 11"x17"  
DESIGN AKG  
DRAWN SWF  
CHECK JDM  
APPR'D \*  
JOB NO 11832

RESERVE ADM LOUISIANA

**PROPOSED DOCK REPAIRS  
CROSS-SECTION**

SHEET NO. **X1**



DEPARTMENT OF THE ARMY  
U.S. ARMY CORPS OF ENGINEERS, NEW ORLEANS DISTRICT  
7400 LEAKE AVENUE  
NEW ORLEANS LA 70118-3651

Regulatory Division

SUBJECT: CEMVN-RG (General Permit) GP-22  
MVN-2005-00765 WQQ

DEPARTMENT OF THE ARMY GENERAL PERMIT FOR CERTAIN MISCELLANEOUS  
ACTIVITIES WITHIN THE LOUISIANA COASTAL ZONE THAT HAVE MINIMAL  
INDIVIDUAL OR CUMULATIVE ADVERSE IMPACTS

Authorization No.: (General Permit) GP-22

Effective Date: September 26, 1983

Expiration Date: October 31, 2027

This general permit is superseded by the Programmatic General Permit for activities regulated by the Louisiana Office of Coastal Management.

Under authorization granted by applicable sections of Parts 320 through 332 of Title 33, Code of Federal Regulations, and delegated authority from the Commander, U. S. Army Corps of Engineers, the District Engineer at New Orleans has determined that it is in the public interest to issue a general permit to authorize the following activities subject to the conditions contained in this permit and occurring within the coincidental boundaries of the Louisiana Coastal Zone and the New Orleans District:

a. Work or structures in or affecting navigable waters of the United States pursuant to Section 10 of the Rivers and Harbors Act of March 3, 1899 (33 USC 403).

b. The discharge of dredged and/or fill material into waters of the United States pursuant to Section 404 of the Clean Water Act (33 USC 1344).

c. Inclusions. The following work will likely be eligible under this general permit:

(1) Maintenance dredging in oil or gas well channels, canals, and slips. Deposition of the dredged material may be in open water, or on existing spoil banks, or used to create or maintain existing wetlands. The applicant's proposed disposal area for dredged material will be reviewed to determine if alternate practical disposal areas are available near the project site that have less adverse environmental impact; or if bucket, hydraulic, wheel wash, or spray dredging should be utilized. Final approval for the work under the general permit may require use of an alternate disposal site and/or dredging and disposal method, and/or other mitigation.

(2) Any flowlines, pipelines and utility lines up to 50,000 linear feet in length and all aerial transmission lines. Must utilize the least damaging, practicable route and construction method, otherwise an individual permit will be required. Power transmission lines must comply with regulations found at 33 CFR Part 322.5(i).

NOTE: Pipelines, flowlines, lift lines, etc., may also be laid on the marsh surface, provided they would not create a potential hazard to navigation.

(3) Lowering or relocation of pipelines due to erosion or to accommodate a federal project.

(4) Well structures and production facilities in open waters that are not on shell reefs, submerged seagrass beds, or in the emerging Atchafalaya delta.

(5) Bulkheads, riprap, etc., used for pipeline erosion protection.

(6) Waterway closures (with or without culverts) that are not part of a marsh management plan, constructed of shell, riprap, or other suitable hardened caps installed in man-made canals for mitigation purposes recommended by federal agencies.

(7) Platforms in open waters for fishing or research that do not interfere with navigation.

(8) The construction of pile-supported or barge-mounted production facilities (e.g., well structures, heater platforms) in wetlands and man-made oil field canals.

(9) Oil and gas well canals and channels not greater than 70 feet wide or slips not larger than 345 feet by 160 feet and/or with a total length (canal, channel, and slip) not greater than 500 feet, and specifying that restoration will be conducted upon abandonment. Dredged material may be placed in open water, on existing spoil banks, or used to create or maintain existing wetlands. Restoration will normally include plugging the mouth of the canal with an earthen closure capped with riprap or other suitable erosion retarding material, placing 50-foot wide gaps in the spoil banks on either side, and re-opening any water courses blocked by the spoil placement. All spoil above the 2-foot elevation may be returned to the slip and canal or used to create or maintain adjacent wetlands. If so, the site which would result in less environmental impact would be the site considered for general permit approval.

(10) Oil and gas well slips no larger than 120 feet by 375 feet, located parallel and contiguous to an existing canal.

(11) Reconstruction and backfill of a bulkhead less than 3 feet channelward of existing bulkhead structures and does not exceed 10% of the waterway width, for maintenance purposes.

(12) Dredging of less than 2,000 cubic yards of material to provide or maintain moorage at an existing bulkhead, wharf, boat slip, or access canal. Dredged material will not be placed in open water or wetlands.

(13) Construction of private or commercial boat launching ramps and parking areas requiring the placement of less than 250 cubic yards of fill or disturbing no greater than a total of one-half of an acre of wetlands.

(14) Installation of no more than two mooring piles (including clusters that consist of up to three piles) for small boats.

(15) Timber wharves and decks, as well as single story timber pile or float supported boat sheds that cannot serve as a camp, foundation for a residence, or a residence, provided that any of the structures identified above:

(a) are no longer (i.e., channelward extension into the waterway) than 10 percent of the waterway width at the project site, or

(b) will not cause unreasonable interference with navigation (see general condition q), whichever is less.

(16) Work not specifically excluded which fills, excavates, impounds, drains, or segregates no greater than one (1) acre of wetlands.

d. Exclusions. The following work will NOT be eligible under this general permit.

Applications for this work will be evaluated in accordance with 33 CFR 325.

(1) Work outside the Louisiana coastal zone (see enclosed map).

(2) When a permission from the Corps pursuant to 33 U.S.C.408 is required, final action cannot be made until the Section 408 permission is granted.

(3) Structures or work associated with new boating facilities or with the extension of the area limits of existing boating facilities. For the purpose of this condition, "boating facilities" are marinas, yacht clubs, boat clubs, and other entities that rent or sell mooring space.

(4) Structures or work in, or that would impinge upon the value (habitat, hydrology, etc.) of, any National Wildlife Refuge, National Forest, areas administered by the National Park Service of the U. S. Department of the Interior, areas administered by the Louisiana Departments of Natural Resources or Wildlife and Fisheries, or other similar publicly held areas administered by federal, state, or local governmental authority, unless special permission from these agencies is submitted with the application for this general permit.

(5) Projects of national concern. This exclusion is invoked on a case-by-case basis and represents, in essence, a special class of projects that receive particular attention in Corps decisions on whether to exercise the discretionary authority to require individual applications for work that otherwise meets all of this permit's conditions. While a precise definition is not possible, this category of work normally includes, but is not limited to, the following examples: projects that could cause an unreasonable interference with navigation; significant wetland fills; major power plants, shipping facilities and oil refineries; major commercial, residential or industrial developments; mitigation banks; and work that could adversely affect habitats important to migratory birds, endangered or threatened species, estuarine-dependent fishes and shellfishes, or other species of high federal interest; or historic, cultural, or archeological sites listed in the National Register of Historic Places or sites listed in the National Registry of Natural Landmarks.

(6) Oil and gas well canals or channels greater than 70 feet wide or slips larger than 345 feet by 160 feet and/or with a total (canal and slip) length greater than 500 feet (to include access canals), and any not specifying that restoration (if appropriate), will be conducted upon abandonment.

(7) Work within 1,500 feet of colonial bird nesting sites or within 1 mile of bald eagle nesting sites, unless specifically approved by the relevant governing agency(s).

(8) Pumping and/or drainage facilities with associated levee systems, which are capable of draining (either forced or gravity) any wetlands not currently subject to artificial lowering of water levels.

(9) Work that would modify the effectiveness of an existing, functional water control structure.

(10) Mining for sand, gravel, or shell.

(11) Work that fills, excavates, impounds, drains, or segregates over one acre of wetlands.

(12) Work within a component of a National Wild and Scenic River System or State Scenic River System without written approval from the appropriate authority.



General permit GP-22 is subject to the following general conditions:

a. All activities identified and authorized herein shall be consistent with the terms and conditions of this permit, and any activities not specifically identified and authorized herein shall constitute a violation of the terms and conditions of this permit which may result in modification, suspension, or revocation of the authorization granted to the permittee, in whole or in part, as set forth more specifically in general conditions i. or j. below, and in the institution of such legal proceedings as the United States government may consider appropriate, whether or not this permit has been previously modified, suspended, or revoked in whole or in part.

b. All activities authorized herein shall, if they involve, during their construction or operation, any discharge of pollutants into waters of the United States, be at all times consistent with applicable water quality standards, effluent limitations and standards of performance, prohibitions, pre-treatment standards and management practices established pursuant to the Clean Water Act (PL 92-500: 86 Stat. 816), or pursuant to applicable state and local laws.

c. The discharge shall not affect a threatened or endangered species as identified under the Endangered Species Act or endanger the critical habitat of such species.

d. The permittee agrees to make every reasonable effort to execute the construction or operation of the work authorized herein in a manner so as to minimize any adverse impact on fish, wildlife, special aquatic sites, and natural environmental values.

e. The permittee agrees that the construction of work authorized herein shall be executed in a manner so as to minimize any degradation of water quality.

f. The permittee shall permit the District Engineer or his authorized representative(s) or designee(s) to make periodic inspections of the project site(s) and disposal site(s) if different from the project sites(s) at any time deemed necessary in order to assure that the activity being performed under authority of this permit is in accordance with the terms and conditions prescribed herein.

g. The permittee shall maintain the structure or work authorized herein in a good and safe condition.

h. This permit does not convey any property rights, either in real estate or material, or any exclusive privileges; and it does not authorize any injury to property or invasion of rights or any infringement of federal, state or local laws or regulations nor does it obviate the requirement to obtain state or local assent required by law for the activity authorized herein.

i. This permit and/or any individual authorizations granted under this permit may be summarily suspended, in whole or in part, upon a finding by the District Engineer that immediate suspension of the activity authorized herein would be in the general public interest.

j. Any individual authorization granted under this permit may be either modified, suspended, or revoked in whole or in part if the Secretary of the Army or his authorized representative determines that there has been a violation of the terms or conditions of this permit or that such action would otherwise be in the public interest.

k. In issuing authorizations under this permit, the federal government will rely upon information and data supplied by the applicant. If, subsequent to the issuance of an authorization, such information and data prove to be false, incomplete, or inaccurate, the permit authorization may be modified, suspended, or revoked, in whole or in part.

l. Any modification, suspension, or revocation of this permit or any individual authorization granted under this permit will not be the basis for any claim for damages against the United States.

m. This permit does not authorize or approve the construction of particular structures, the authorization or approval of which require authorization by the Congress or other agencies of the federal government.

n. If and when an authorized activity is to be abandoned, unless such abandonment is part of a transfer procedure by which the authorization is being transferred to a third party, the individual(s) who receive(s) the authorization must restore the area to a condition satisfactory to the District Engineer. Any transfer procedure must include the transferee's written agreement to comply with all terms and conditions of this permit and any additional conditions that may be added to the individual authorization.

o. The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

p. Your use of the permitted activity must not interfere with the public's right to free navigation on all navigable waters of the United States.

q. You must install and maintain, at your expense, any safety lights, signs and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, on your authorized facilities. Any inquiries concerning a U.S. Coast Guard Private Aids to Navigation marking determination may be directed to the Eighth Coast Guard District (dpw), Hale Boggs Federal Building, 500 Poydras St., Suite 1230, New Orleans, Louisiana 70130, at (504) 671-2330 or via email to: [D8oanPATON@uscg.mil](mailto:D8oanPATON@uscg.mil) For general information related to Private Aids to Navigation, you may visit the Eighth CG District web site at: <http://www.atlanticarea.uscg.mil/district-8/district-divisions/waterways/PATON>.

r. If the authorized project, or future maintenance work, involves the use of floating construction equipment (barge mounted cranes, barge mounted pile driving equipment, floating dredge equipment, dredge discharge pipelines, etc.) in the waterway, you are advised to notify the Eighth Coast Guard District so that a Notice to Mariners, if required, may be prepared. Notification with a copy of this permit approval and drawings can be emailed to: [D8MarineInfo@uscg.mil](mailto:D8MarineInfo@uscg.mil), or mailed to the Commander (dpw), Eighth Coast Guard District, Hale Boggs Federal Building, 500 Poydras Street, Suite 1230, New Orleans, Louisiana 70130. Telephone inquiries can be directed to the Eighth Coast Guard District, Waterways Management at (504) 671-2118.

s. Structures authorized under this General Permit near designated shipping safety fairways or designated anchorage areas must comply with 33 CFR 322.5(l).

t. This general permit cannot be used for piecemeal dredge or fill activities or other piecemeal work, nor is this general permit valid for any activity that is part of an overall project for which the Corps has determined that an individual permit is required.

u. Permittees must evaluate the effect that the proposed work would have on historic properties listed, or eligible for listing, in the National Register of Historic Places (NRHP) prior to initiation of work. Historic properties include prehistoric and historic archaeological sites, and areas or structures of cultural interest that occur in the permit area. If a known historic property would be encountered, the permittee shall notify CEMVN and shall not conduct any work in the permit area that would affect the property until the requirements of 33 CFR Part 325, Appendix C, and 36 CFR Part 800 have been satisfied. If a previously unknown historic property is encountered during work authorized by this General Permit, the permittee shall immediately notify the USACE and avoid further impact to the site until the CEMVN has verified that the requirements of 33 CFR Part 325, Appendix C, and 36 CFR Part 800 have been satisfied.

v. All work shall be done in accordance with the approved plans and confined to the permitted work area(s) represented within the attached drawings. If the project requires modifications to the authorized plan, the permittee shall contact this office to obtain a permit amendment and/or review and decision on the plans, prior to commencement of those alterations.

w. Material discharged into wetlands will be contained or stabilized and will be compatible with existing soils and will not otherwise constitute a non-point pollution source.

x. When project works will be constructed with, be adjacent to, or otherwise in proximity to other works conducted pursuant to this general permit, the project drawings will show the relationship of such structures to the proposed work and their appropriate Coastal Use Permit numbers.

y. Misrepresentation of the proposed project or falsification of facts may be cause to exclude the project from further general proceedings. If the misrepresentation or falsification was intentional, the applicant shall forfeit the right to conduct work at the proposed project site pursuant to this general permit.

z. If the project includes deposits of dredged or fill material, only clean dredged material, or hauled in material which is free of waste metal products, chemical pollutants, unsightly debris, or any material that may be detrimental to the environment, may be used as fill.

General permit GP-22 is subject to the following special conditions:

a. No work may be performed under this general permit unless and until all required federal, state, and local permits licenses, authorizations, and certifications are obtained, including but not limited to:

(1) A Coastal Use Permit signed by the Secretary of the Louisiana Department of Natural Resources or his designee, or

(2) A letter from the Secretary of the Louisiana Department of Natural Resources or the Administrator of the Office of Coastal Management stating that, pursuant to state law, a Coastal Use Permit is not required for the activity in question.

b. Irrespective of whether a proposal meets the other conditions of this permit, the Corps of Engineers retains discretionary authority to subject the proposal to all standard permit review procedures, whenever the Corps of Engineers determines that the potential consequences of the proposal warrant this requirement.

#### Application, Reporting & Acknowledgement Procedures

Applications, specifically requesting authorization under the general permit, should be sent to the Louisiana Department of Natural Resources, Office of Coastal Management, Post Office Box 4487, Baton Rouge, Louisiana 70804-4487. The Office of Coastal Management (OCM) will review the application for completeness and, if complete, will assign it an OCM file reference number and forward a copy of the application to the New Orleans District. Applications may also be submitted electronically at <http://dnr.louisiana.gov/crm/>. A complete application includes all of the following:

1. A coastal use joint permit application fee (\$20 for residential projects, \$100 for non-residential projects) in the form of a check made payable to "OCM". Payment to OCM may also be made via credit card online or by telephone.

2. The Joint Permit Application form that includes, but is not limited to: the applicant's signature, the latitude and longitude, the Section, Township and Range, a statement by the applicant that the best of his or her knowledge, the project complies with and will be conducted in a manner that is consistent with the Louisiana Coastal Management Program, the information requested in step 12 of the form regarding landowners, and a clear description of the proposed work and alternatives considered with details supporting the chosen alternative.

3. For projects requiring authorization under Section 404 of the Clean Water Act, in reference to 33 CFR 325.1 (d)(7), the applicant is required to submit a statement explaining how impacts to the waters of the United States are to be avoided and minimized. The application must also include either a statement describing how impacts to waters of the United States are to be compensated for or a statement explaining why compensatory mitigation should not be required for the proposed impacts. Unavoidable project related impacts will be assessed on a case-by-case basis to determine if compensatory mitigation will be required. If required, proposed compensatory mitigation should be located within the appropriate watershed for the permitted impact, to the extent practicable, and follow the preferential hierarchy established in 33 CFR 332.3(b): 1) Mitigation bank credits; 2) Existing in-lieu fee programs; 3) permittee-responsible mitigation (PRM).

4. Signed statements from the affected landowners establishing that they have no objection to the required restoration/mitigation, and that they agree not to develop restoration/mitigation areas without the prior approval of the District Engineer.

5. A vicinity map on which the project site is clearly indicated, and accurately scaled drawings (plan view and cross section with mean high and low water lines) with all dimensions clearly labeled and the number of cubic yards of dredged or fill material involved. When project works will be constructed with, be adjacent to, or otherwise in proximity to other works conducted under this general permit, drawings MUST show the relationship of such work to the proposed activity and their appropriate permit numbers. Further information on submitting a complete permit application and drawings can be found by visiting: <https://www.mvn.usace.army.mil/Missions/Regulatory/Permits/>

Upon receipt of a copy of the application package from OCM, the New Orleans District will review it for completion and eligibility for the general permit. Incomplete applications will be returned to the applicant and/or the applicant will be advised of the application deficiencies. Work not eligible for GP-22 will be evaluated in accordance with the appropriate permit application review process, to include a joint Corps/OCM public notice, if applicable.

Applicants whose proposals meet the requirements of GP-22 will be notified by letter that their project is being considered for approval under the general permit.

BY THE AUTHORITY OF THE SECRETARY OF THE ARMY:

Sincerely,

Martin S. Mayer  
Chief, Regulatory Division

Encl





N



1 in = 19 miles

 Revised Boundary

Source: Esri, i-cubed, USDA, USGS, AEX, GeoEye, Getmapping, Aerogrid, IGN, IGP, UPR-EGP, and the GIS User Community





## **STANDARD MANATEE CONDITIONS FOR IN-WATER ACTIVITIES**

During in-water work in areas that potentially support manatees, all personnel associated with the project shall be instructed and aware of the potential presence of manatees, manatee speed zones, and the need to avoid collisions with, and injury to, manatee. All personnel shall be advised that there are civil and criminal penalties for harming, harassing, or killing manatees which are protected under the Marine Mammal Protection Act of 1972 and the Endangered Species Act of 1973. Additionally, personnel shall be instructed not to attempt to feed or otherwise interact with the animal.

All on-site personnel are responsible for observing water-related activities for the presence of manatee(s). To minimize potential impacts to manatees in areas of their potential presence, the permittee shall insure the following are adhered to:

- All work, equipment, and vessel operation shall cease if a manatee is spotted within a 50-foot radius (buffer zone) of the active work area. Once the manatee has left the buffer zone on its own accord (manatees must not be herded or harassed into leaving), or after 30 minutes have passed without additional sightings of manatee(s) in the buffer zone, in-water work can resume under careful observation for manatee(s).
- If a manatee(s) is sighted in or near the project area, all vessels associated with the project shall operate at “no wake/idle” speeds within the construction area and at all times while in waters where the draft of the vessel provides less than a four-foot clearance from the bottom. Vessels shall follow routes of deep water whenever possible.
- If used, siltation or turbidity barriers shall be properly secured, made of material in which manatees cannot become entangled, and be monitored to avoid manatee entrapment or impeding their movement.
- Temporary signs concerning manatees shall be posted prior to and during all in-water project activities and removed upon completion. Each vessel involved in construction activities shall display at the vessel control station or in a prominent location, visible to all employees operating the vessel, a temporary sign at least 8½" X 11" reading language similar to the following: “CAUTION BOATERS: MANATEE AREA/ IDLE SPEED IS REQUIRED IN CONSTRUCTION AREA AND WHERE THERE IS LESS THAN FOUR FOOT BOTTOM CLEARANCE WHEN MANATEE IS PRESENT”. A second temporary sign measuring 8½" X 11" shall be posted at a location prominently visible to all personnel engaged in water-related activities and shall read language similar to the following: “CAUTION: MANATEE AREA/ EQUIPMENT MUST BE SHUTDOWN IMMEDIATELY IF A MANATEE COMES WITHIN 50 FEET OF OPERATION”.
- Collisions with, injury to, or sightings of manatees shall be immediately reported to the U.S. Fish and Wildlife Service’s, Louisiana Ecological Services Office (337/291-3100) and the Louisiana Department of Wildlife and Fisheries, Natural Heritage Program (225/765-2821). Please provide the nature of the call (i.e., report of an incident, manatee sighting, etc.); time of incident/sighting; and the approximate location, including the latitude and longitude coordinates, if possible.





PROTECTING YOU  
AND YOUR FAMILY

The Board of Commissioners  
OF THE  
Pontchartrain Levee District

2069 RAILROAD AVENUE • P.O. BOX 426 • LUTCHER, LA 70071  
TEL: 225-869-9721 FAX: 225-869-9723 LA WATTS: 800-523-3148

SENECCA D. BOUDREAU  
PRESIDENT

BLAINE J. SHEETS  
VICE PRESIDENT

COMMISSIONERS  
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PERCY HEBERT, JR.  
WARDELL IRVIN  
AARON POURCIAU  
ALLEN J. ST. PIERRE, SR.

DWIGHT D. POIRRIER  
SPECIAL COUNSEL

MONICA SALINS GORMAN  
EXECUTIVE DIRECTOR

**THE PONTCHARTRAIN LEVEE DISTRICT MUST BE CONTACTED PRIOR  
TO COMMENCEMENT AND AT THE END OF ALL ACTIVITIES VIA EMAIL:  
[LONO@LEVEEDISTRICT.ORG](mailto:LONO@LEVEEDISTRICT.ORG)**

RIVER STAGES: [WWW.RIVERGAGES.COM](http://WWW.RIVERGAGES.COM)

Date: July 10, 2023

LONO No.: 230710150

This is to certify that: ADM  
c/o Lanier & Associates Consulting Engineers, Inc.

is granted a Letter of No Objection to install 35 pipe piles and two additional pilings to provide necessary support to the existing dock structure and approach way along the left descending Mississippi River bank, vicinity of second order levee station 4591+87, at Reserve, Louisiana, in St. John the Baptist Parish and is being issued, and subject to compliance with the following terms and conditions:

1. The proposed bank degrading work is performed and completed while the stage of the Mississippi River is below elevation +11.0 feet on the Carrollton gage, at New Orleans, Louisiana. If the degrading work is not completed prior to the stage of the river exceeding +11.0 feet on the Carrollton gage, then the applicant must cease all degrading work at the direction of the U.S. Army Corps of Engineers (USACE).
2. Proposed bank degrading to elevation +12.0, extending landward 71 feet with a Vertical on 4 Horizontal backslope to existing ground shall be performed prior to any other work in the area. Surveys of the degrading shall be conducted by a registered land surveyor and submitted for review prior to any other work being performed.
3. The pile driving work is performed and completed while the stage of the Mississippi River is below elevation +15.0 feet on the Carrollton gage, at New Orleans, Louisiana. If the subsurface work is not completed prior to the river exceeding this stage, then the applicant must cease all subsurface work at the direction of the Corps of Engineers. Information concerning current river stages may be obtained on the website at [www.rivergages.com](http://www.rivergages.com).
4. Heavy equipment greater than HS-20 loading (72,000lbs) is not allowed over the levee or in the batture without an approved stability analysis.

**THE BOARD OF COMMISSIONERS  
OF THE  
PONTCHARTRAIN LEVEE DISTRICT**

5. Riprap is placed around all piles that penetrate through the revetment in accordance with the Corps of Engineers standard drawing, "Repair Procedures Required When Penetrating Revetments With Piles, Caissons and/or Pile Clusters," file No. -18-45204.
6. The barges are moored in such a manner as not to damage the existing batture tree screen, revetment, or encroach within 100 feet of the riverside levee toe, under any river conditions.
7. The applicant does not spud or anchor into the existing revetment. Any damage is limited to only driving those piles necessary to complete the work.
8. The barges maintain a minimum of three feet of clearance over the underwater revetment during any river stage.
9. Any damage to the revetment resulting from applicant's activities shall be repaired in accordance with USACE guidelines at the applicant's expense.
10. There shall be no unreasonable interference with navigation by the existence or use of the activity authorized herein.
11. If the authorized project or future maintenance work, involves the use of floating construction equipment (barge mounted cranes, barge mounted pile driving equipment, floating dredge equipment, dredge discharge pipelines, etc.) in the waterway, you are advised to notify the Eighth Coast Guard District so that a Notice to Mariners, if required, may be prepared. Notification with a copy of your permit approval and drawings should be emailed to: D8Marine[Info@uscg.mil](mailto:Info@uscg.mil), or mailed to the Commander (dpw), Eighth Coast Guard District, Hale Boggs Federal Building, 500 Poydras Street, Room 1230, New Orleans, Louisiana 70130, about 1 month before you plan to start work. Telephone inquiries can be directed to the Eighth Coast Guard District, Waterways Management at (504) 671-2118.
12. The applicant will, at his or her expense, install and maintain any safety light, signals, and signs prescribed by the United States Coast Guard, through regulations or otherwise, on authorized facilities or on equipment used in performing work under the authorization.
13. That precaution is taken to ensure that no construction material, demolition material, or debris falls into the waterway or near the bank of the waterway during construction or demolition activities.
14. This letter of no objection (LNO) is conditioned upon the applicant/agent providing the following to CPRA, USACE and PLD before commencing any activity allowed under the letter of no objection. Final work products deemed necessary for granting this letter of no objection associated with this project shall be stamped (construction ready drawings, designs, reports, as-builts differing significantly from final plans, etc...) by each

**THE BOARD OF COMMISSIONERS  
OF THE  
PONTCHARTRAIN LEVEE DISTRICT**

professional engineer responsible for their relevant field of practice for the project. Failure to provide information requested or failure to abide by the conditions and requirements contained herein shall constitute ground for rescinding this letter of no objection. In such an event, CPRA will provide notice to USACE and PLD that the letter of no objection has been rescinded.

15. That the penetration of any revetment by the driving of piles and/or pile clusters will be appropriately repaired in accordance with U.S. Army Corps of Engineers Plan File No. H-18-45204.
16. If no pile load tests are to be performed, piles shall be designed using a minimum Factor of Safety of 3 in compression. If static pile load tests are to be performed, piles shall be designed using a minimum Factor of Safety of 2 in compression. If dynamic pile load tests are to be performed, piles shall be designed using a minimum Factor of Safety of 2.5 in compression. A minimum Factor of Safety of 3 in tension shall be used for all cases. Pile load tests shall be performed as per ASTM Standards and all pile load test reports shall be furnished to CPRA, USACE, and the Pontchartrain Levee District. Within thirty days of completion.
17. That the work is to be completed according to the recommendations provided in the geotechnical report prepared by Gore Engineering, Inc., on 8 January 2002. If any change is made to these assumptions, it is the responsibility of the applicant to submit this information to CPRA for further review.
18. That the metal structure has a minimum of the equivalent of two coats of 8-mils coal tar epoxy. If a cathodic protection system will be used then it must conform with current industry (e.g., NACE) standards. Operation and maintenance of the system shall be the responsibility of the system owner.
19. That the work and/or installation poses no hazard to area navigation.
20. That the applicant install and maintain any hazard markers and/or navigation aids that may be required by the U.S. Department of Homeland Security, United States Coast Guard.
21. That the applicant is responsible for maintaining the existing level of flood protection at all times to the satisfaction of the Pontchartrain Levee District.
22. Please provide written notification to this office of the construction timeline to include the proposed start and end dates and completion of the work permitted herein.
23. This letter of no objection is based upon engineering criteria and potential impacts to the flood protection system only, and no interpretation or comments regarding local drainage or traffic issues, local laws, zoning, or ordinances concerning property rights, etc., have been made. Please be advised that the proposed project may require a Department of the

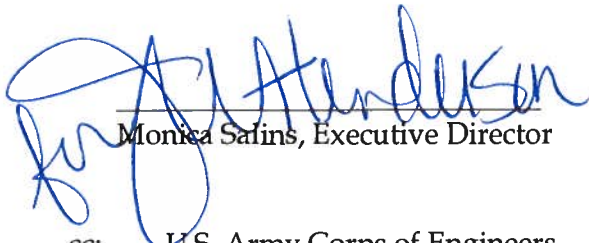
**THE BOARD OF COMMISSIONERS  
OF THE  
PONTCHARTRAIN LEVEE DISTRICT**

Army (DA) permit under Section 10 of the Rivers and Harbors Act and/or Section 404 of the Clean Water Act. If a DA permit is required, it is the applicant's responsibility to obtain such permit from the New Orleans District Regulatory Division prior to the commencement of any work. The USACE point of contact in the New Orleans District Regulatory District is Mr. Damon Morse, at 504-862-2041 or [Damon.Morse@usace.army.mil](mailto:Damon.Morse@usace.army.mil). This letter of no objection does not constitute a response to a Section 404/10 permit application, if required.

24. All work is to be performed in accordance with the rules and regulations of the Coastal Protection and Restoration Authority (CPRA) and the U.S. Army Corps of Engineers (USACE). In addition, terms and conditions stated within the Letters of No Objection from both CPRA dated January 27, 2023 (21932) and USACE dated July 7, 2023 (2023-0064) are attached hereto and made a part hereof in their entirety.
25. The work is accomplished in accordance with applicant's letter dated January 17, 2023, and April 14, 2023, and accompanying drawings. **The Pontchartrain Levee District must be contacted prior to commencement AND at the end of all activities via email: [lono@leveedistrict.org](mailto:lono@leveedistrict.org)**
26. Applicant and his surety assume all cost of proper maintenance and upkeep relative to the facility herein authorized.
27. The proposed work must not restrict the Pontchartrain Levee District's maintenance operations, or any potential flood fight activities at the levee, nor shall it obstruct or impede drainage, or create areas of standing water on the levee batture.
28. All materials associated with the proposed work must be removed from the area upon completion of the project and the area must be returned to its original state of existence or better.
29. That should changes in the location or section of the existing levee and/or river, or in the generally prevailing conditions in the vicinity, be required in the future in the public interest, the applicant shall make such changes in the project concerned, or in the arrangements thereof, as may be necessary to satisfactorily meet the situation and shall bear the cost thereof.
30. The applicant agrees to indemnify and save grantor harmless from any and all liability, including liability of grantor to applicant, its heirs, successors, and/or assigns, arising out of and/or incident to the rights herein granted. Applicant further agrees to appear and defend any and all suits instituted against this Board arising out of and/or incident to this letter of no objection, and to pay in full any judgment rendered against this Board arising out of and/or incident to the granting of the letter of no objection.

**THE BOARD OF COMMISSIONERS  
OF THE  
PONTCHARTRAIN LEVEE DISTRICT**

31. That there is no penetration, excavation, disturbance, or placement of structures within the theoretical levee design section.
32. Further, this letter of no objection does not purport to authorize applicant's entry upon any land, public or private, including lands owned by this Board, without first securing from the owner's permission to conduct such operations. This letter of no objection does not purport to waive the requirements of other governmental or sub governmental bodies, and no work should commence until all necessary permits are required.
33. This letter of no objection is valid for a period of one year. A request for renewal should be submitted to this office prior to **July 10, 2024**.
34. In addition, it is required that a copy of the letter of no objection is to be maintained on site, at all times.



Handwritten signature in blue ink, appearing to read "Monica Salins".

Monica Salins, Executive Director

cc: U.S. Army Corps of Engineers  
Coastal Protection and Restoration Authority

## Tajanae Smith

---

**From:** Terry, Albert J Jr CIV USARMY CEMVN (USA) <Albert.J.Terry@usace.army.mil>  
**Sent:** Friday, July 7, 2023 11:35 AM  
**To:** LONO Group  
**Cc:** cprarequest@la.gov; Powell, Amy E CIV USARMY CEMVN (USA); Jennings, Heather L CIV USARMY CEMVN (USA); Morse, Damon P CIV USARMY CEMVN (USA); jmaurin@lanier-engineers.com; againes@lanier-engineers.com; dwayne.clement@adm.com; Price Lanier; Tim Duncan  
**Subject:** LNO 2023-0064 (PLD) for 23-01-17\_ADM, Reserve - Proposed Maintenance - LA 11832  
**Attachments:** 23-01-16\_11832-LA DNR JPA Submitted.pdf; 23-01-12\_11832-Permit Drawings.pdf; 23-01-17\_11x17 Section.pdf; P20230032.pdf; 2023-0064 (response from applicant 14 April 2023).pdf; 2023-0064 (Response from applicant 25 April 2023).pdf; REVREPAIR.pdf; mailout\_permit\_MVN-2023-00409-EDM\_GP 22.pdf

Pontchartrain Levee District (PLD),

We have reviewed the attached permit applications dated January 12, 2023, and January 16, 2023, from Lanier & Associates, obo ADM, to install 35 pipe piles and two additional pilings to provide necessary support to the existing dock structure and approach way along the left descending Mississippi River bank, vicinity of second order levee station 4591+87, at Reserve, Louisiana, in St. John the Baptist Parish.

By letter dated February 1, 2023, the applicant was advised to modify certain portions of the revised proposal to comply with our standard criteria, and to submit additional information for our further review. Subsequently, by emails dated April 14, 2023, and April 25, 2023, the applicant submitted the necessary additional information which has been reviewed and approved. Therefore, we have no objection to the issuance of a permit for the proposed work.

Please take this email as our Letter of No Objection for the project. No work shall commence until a permit is received from the PLD.

We have no objection to the request provided:

- a. The work is accomplished in accordance with the above referenced applications, emails, vicinity map and drawings.
- b. The proposed bank degrading work is performed and completed while the stage of the Mississippi River is below elevation +11.0 feet on the Carrollton gage, at New Orleans, Louisiana. If the degrading work is not completed prior to the stage of the river exceeding +11.0 feet on the Carrollton gage, then the applicant must cease all degrading work at the direction of the U.S. Army Corps of Engineers (USACE).
- c. Proposed bank degrading to elevation +12.0, extending landward 71 feet with a 1 Vertical on 4 Horizontal backslope to existing ground shall be performed prior to any other work in the area. Surveys of the degrading shall be conducted by a registered land surveyor and submitted for review prior to any other work being performed.
- d. The pile driving work is performed and completed while the stage of the Mississippi River is below elevation +15.0 feet on the Carrollton gage, at New Orleans, Louisiana. If the subsurface work is not completed prior to the river exceeding this stage, then the applicant must cease all subsurface work at the direction of the Corps of Engineers. Information concerning current river stages may be obtained on our website at [www.rivergages.com](http://www.rivergages.com).
- e. Heavy equipment greater than HS-20 loading (72,000lbs) is not allowed over the levee or in the batture without an approved stability analysis.



- f. Riprap is placed around all piles that penetrate through the revetment in accordance with the Corps of Engineers standard drawing, "Repair Procedures Required When Penetrating Revetments With Piles, Caissons and/or Pile Clusters", file No. H-18-45204.
- g. The barges are moored in such a manner as not to damage the existing batture tree screen, revetment, or encroach within 100 feet of the riverside levee toe, under any river conditions.
- h. The applicant does not spud or anchor into the existing revetment. Any damage is limited to only driving those piles necessary to complete the work.
- i. The barges maintain a minimum of three feet of clearance over the underwater revetment during any river stage.
- j. Any damage to the revetment resulting from applicant's activities shall be repaired in accordance with USACE guidelines at the applicant's expense.
- k. There shall be no unreasonable interference with navigation by the existence or use of the activity authorized herein.
- l. If the authorized project, or future maintenance work, involves the use of floating construction equipment (barge mounted cranes, barge mounted pile driving equipment, floating dredge equipment, dredge discharge pipelines, etc.,) in the waterway, you are advised to notify the Eighth Coast Guard District so that a Notice to Mariners, if required, may be prepared. Notification with a copy of your permit approval and drawings should be emailed to: [D8MarineInfo@uscg.mil](mailto:D8MarineInfo@uscg.mil), or mailed to the Commander (dpw), Eighth Coast Guard District, Hale Boggs Federal Building, 500 Poydras Street, Room 1230, New Orleans, Louisiana 70130, about 1 month before you plan to start work. Telephone inquiries can be directed to the Eighth Coast Guard District, Waterways Management at (504) 671-2118.
- m. The applicant will, at his or her expense, install and maintain any safety light, signals, and signs prescribed by the United States Coast Guard, through regulations or otherwise, on authorized facilities or on equipment used in performing work under the authorization.
- n. Please provide written notification to this office of the construction timeline to include the proposed start and end dates and completion of the work permitted herein.

This letter of no objection is based upon engineering criteria and potential impacts to the flood protection system only, and no interpretation or comments regarding local drainage or traffic issues, local laws, zoning, or ordinances concerning property rights, etc., have been made. Please be advised that the proposed project requires a Department of the Army (DA) permit under Section 10 of the Rivers and Harbors Act and/or Section 404 of the Clean Water Act. It is the applicant's responsibility to obtain such permit from the New Orleans District Regulatory Division prior to the commencement of any work. The USACE point of contact in the New Orleans District Regulatory Division is Mr. Damon Morse, at 504-862-2041 or [Damon.Morse@usace.army.mil](mailto:Damon.Morse@usace.army.mil). This letter of no objection does not constitute a response to a Section 404/10 permit application.

If you have any questions, please contact me. Additionally, future correspondence concerning this project should reference our Letter of No Objection number 2023-0064. This will allow us to more easily locate records of previous correspondence, and thus provide a quicker response.

Thanks,

Albert J. Terry Jr.  
Asst. Operations Manager, Completed Works  
Operations Division-CEMVN-ODS-W  
New Orleans District-Corps of Engineers



# State of Louisiana

January 27, 2023

JOHN BEL EDWARDS  
GOVERNOR

Pontchartrain Levee District  
P. O. Box 426  
Lutcher, LA 70071  
Attention: Ms. Monica Gorman

## PERMIT REQUEST FORM OF NO OBJECTION

This Letter of No Objection is not a regulatory permit and does not authorize the implementation of any project without documented approval from all appropriate regulatory authorities.

**Permit Applicant:** ADM Grain Co., Reserve, LA

**Date of Request:** 01-18-2023

**Agent:** Lanier & Associates Consulting Engineers, Inc.

**Applicant's Request:** Approval to install 35 pipe pilings to provide support to the existing dock structure, additionally two pilings will be installed to support a section of the walkway. The pilings will all be 30-inch diameter steel pipe piling with the dock piling being ±150-feet long and the walkway piling being ±130-feet long. All work will be done from a barge mounted crane. The closest work location will be approximately 418-feet from the toe of the levee.

1-18-23 Received via email  
Project No. 11832

**Project Location:** All work to occur on the floodside of the left descending Mississippi River Levee at 2154 Louisiana Highway 44, Reserve, St. John the Baptist Parish, Louisiana.

Project Coordinates:..... 30° 03' 16.000" , -90° 34' 41.000"

The above referenced request has been examined by Coastal Protection and Restoration Authority, and no objection is proffered for this request, provided:

1. This Letter of No Objection is only for stated work within or in the vicinity of the Levee District right-of-way, and must be accomplished in accordance with the details set forth in the applicant's request and the conditions contained herein. Any changes to the limits or scope of the proposed work must be submitted for additional review. The Levee District must be contacted in writing prior to commencement and at the end of activities. The applicant is responsible for obtaining and providing copies of any permits or lease agreements necessary from the U.S. Army Corps of Engineers, the U.S. Coast Guard, the Louisiana State Land Office, the Louisiana Department of Transportation and Development, the Louisiana Department of Natural Resources - Office of Coastal Management, the Louisiana Department of Wildlife and Fisheries, the Parish Government and/or any other applicable agencies, as well as documented approval from the area landowner(s) prior to the initiation of the work. The applicant is responsible for adhering to the provisions of any existing permits. The proposed work must not restrict the Levee District's maintenance operations, or any potential flood fight activities at the levee, nor shall it obstruct or impede drainage, or create areas of standing water on the levee batture. The applicant must employ and maintain suitable erosion protection measures at the project site to the satisfaction of the Levee District. The applicant or owner must immediately notify the Levee District of any seepage or sand boils that occur during high water conditions. All materials associated with the proposed work must be removed from the area upon completion of the project and the area must be returned to its original state of existence or better. Any damage done to the levee, floodwall or other flood control structure, revetment, or surrounding project area, resulting from the proposed work must be repaired or replaced by the applicant. Should any change in the location of the existing levee, river, floodwall, drainage



canal, waterway, or generally prevailing conditions in the vicinity, or should any changes in the area be required in the future, in the public interest, the applicant shall make such changes in the project as necessary. Any required changes or repairs shall be at the applicant expense. This letter of no objection is offered with no opinion or approval of the design or engineering feasibility of the work.

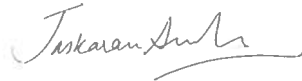
Failure to abide by the conditions and requirements set forth in this Letter of No Objection may constitute non-compliance with the State of Louisiana comprehensive master coastal protection plan and may subject the levee district and/or the applicant/agent to any and all procedures and actions by CPRA or the CPRA Board pursuant to La. R.S. 49:214.5.2(A)(6) and as may be necessary to ensure compliance with such comprehensive master coastal protection plan.

2. That precaution is taken to ensure that no construction material, demolition material, or debris falls into the waterway or near the bank of the waterway during construction or demolition activities.
3. That all subsurface work is performed and backfilled prior to the Mississippi River attaining or exceeding + 11.0 feet NGVD, on the Carrollton Gage at New Orleans, unless the applicant receives documented approval to the contrary from the U.S. Army Corps of Engineers-New Orleans District.
4. This Letter of No Objection (LNO) is conditioned upon the applicant/agent providing the following to CPRA, USACE, and the levee district, before commencing any activity allowed under the LNO. Final work products deemed necessary for granting of this Letter of No Objection associated with this project shall be stamped (construction ready drawings, designs, reports, as-builts differing significantly from final plans, etc...) by each professional engineer responsible for their relevant field of practice for the project. Failure to provide information requested or failure to abide by the conditions and requirements contained herein shall constitute grounds for rescinding this Letter of No Objection. In such an event, CPRA will provide notice to USACE and the levee district that the LNO has been rescinded.
5. That the penetration of any revetment by the driving of piles and/or pile clusters will be appropriately repaired in accordance with U.S. Army Corps of Engineers Plan File No. H-18-45204.
6. If no pile load tests are to be performed, piles shall be designed using a minimum Factor of Safety of 3 in compression. If static pile load tests are to be performed, piles shall be designed using a minimum Factor of Safety of 2 in compression. If dynamic pile load tests are to be performed, piles shall be designed using a minimum Factor of Safety of 2.5 in compression. A minimum Factor of Safety of 3 in tension shall be used for all cases. Pile load tests shall be performed as per ASTM Standards and all pile load test reports shall be furnished to CPRA, USACE, and the levee district within thirty days of completion.
7. That the work is to be completed according to the recommendations provided in the geotechnical report prepared by Gore Engineering, Inc., on 8 January 2002. If any change is made to these assumptions, it is the responsibility of the applicant to submit this information to CPRA for further review.
8. That the metal structure has a minimum of the equivalent of two coats of 8-mils coal tar epoxy. If a cathodic protection system will be used then it must conform with current industry (e.g. NACE) standards. Operation and maintenance of the system shall be the responsibility of the system owner.
9. That the work and/or installation poses no hazard to area navigation.
10. That the applicant install and maintain any hazard markers and/or navigation aids that may be required by the U. S. Department of Homeland Security, United States Coast Guard.

2023-01-27  
Page 3

11. That the applicant is responsible for maintaining the existing level of flood protection at all times to the satisfaction of the levee district.

Yours very truly,



for Ignacio Harrouch, Operations Division Chief  
Coastal Protection and Restoration Authority of Louisiana

21932/js/mc/tj

cc:

U.S. Army Corps Of Engineers-Levees  
U.S. Coast Guard  
Jas Singh