

## **ADDENDUM - CONTINUATION SHEET**

### **PROJECT SPEC COVER / TITLE PAGE**

Revise project title at top of page which currently reads “P-1515 Replace and Alter Fuel Distribution Facilities (Contract A)” to read as follows: “P-1515 Replace and Alter Fuel Distribution Facilities ”.

### **DOCUMENT 00 01 15 LIST OF DRAWINGS**

#### **1.2 CONTRACT DRAWINGS**

The following drawings are revised as of March 13, 2015:

#### **DWG# NAVFAC# DRAWING TITLE**

G-001	12682097	COVER SHEET, (Rev 1, 13Mar15)
M-301	12682251	SECTIONS – F-24 TIE-IN STATION (Rev 1, 13Mar15)
M-401	12682263	ENLARGED PLAN – F-24 TIE-IN STATION (Rev 1, 13Mar15)
M-601	12682301	P&ID – F-24 TIE-IN STATION (Rev 1, 13Mar15)

(these modified drawings accompany this amendment)

#### **On NAVFAC Dwg. No 12682219 (S-551)**

Pipe Support Detail in upper left of drawing: Delete detail note in section view that reads “GUIDE / HOLD-DOWN LUG. ¼-INCH SIDE AND TOP GAPS TYP. UNO” and replace with the following note:

“GUIDE / HOLD-DOWN LUG. ¼-INCH SIDE AND TOP GAPS TYP. UNO (OMIT FOR NON-GUIDED SUPPORTS)”

#### **On NAVFAC Dwg. No 12682219 (S-551)**

Pipe Support Detail in center of drawing: Delete detail note in section view that reads “GUIDE / HOLD-DOWN LUG. ¼-INCH SIDE AND TOP GAPS TYP. UNO” and replace with the following note:

“GUIDE / HOLD-DOWN LUG. ¼-INCH SIDE AND TOP GAPS TYP. UNO (OMIT FOR NON-GUIDED SUPPORTS)”

#### **On NAVFAC Dwg. No 12682224 (S-556)**

Pipe Support Detail in upper left of drawing: Delete current Title of detail that reads “PIPE SUPPORT TYPE PS-20 (GUIDED SLIDE)” and replace with the following Title: “PIPE SUPPORT TYPE PS-20A (NON-GUIDED SLIDE)”

#### **On NAVFAC Dwg. No 12682224 (S-556)**

Pipe Support Detail in upper right of drawing: Delete current Title of detail that reads “PIPE SUPPORT TYPE PS-22 (GUIDED SLIDE)” and replace with the following Title:

“PIPE SUPPORT TYPE PS-22 (GUIDED SLIDE) & PIPE SUPPORT TYPE PS-22A (NON-GUIDED SLIDE)”

**On NAVFAC Dwg. No 12682273 (M-411)**

Site Plan Notes: Delete Note 4 in its entirety, which reads “ 4. DEMOLISH EXISTING PIPE SUPPORT....”, and replace with the following:

“ 4. DEMOLISH EXISTING PIPE SUPPORT PILE CAP. REUSE EXISTING PILE FOR NEW PILE CAP AT NEW BOP ELEVATION. REFER TO STRUCTURAL PIPE SUPPORT DETAIL PS-9A ON SHEET S-553. “

**PROJECT TABLE OF CONTENTS**

Delete Specification Section 33 08 55 and Section 33 57 00.10 in their entirety and replace with the following Sections (dated March 13, 2015 as noted in footer):

- 33 08 55 COMMISSIONING OF FUEL FACILITY SYSTEMS
- 33 57 00.10 MARINE LOADING ARMS TAKETOWN, STORAGE AND REINSTALLATION

(these substituted specification sections accompany this Amendment)

**SECTION 00 22 13.00 20 SUPPLEMENTARY INSTRUCTIONS TO OFFERORS**

1.1 CONTRACT LINE ITEMS

CLIN 0001 – BASE PRICE.

Delete the CLIN 0001AA DESCRIPTION text found in the table in its entirety which reads as follows “ All work associated with P-1515 Replace and Alter Fuel Distribution Facilities (Contract A), DFSP Craney Island, Virginia “, and replace with the following text which reads as follows:

“ All work associated with P-1515 Replace and Alter Fuel Distribution Facilities, at DFSP Craney Island and DFSP Yorktown, Virginia ”

**SECTION 01 14 00 WORK RESTRICTIONS**

1.3 SPECIAL SCHEDULING REQUIREMENTS

d. General Project Work Restrictions

Delete the last sentence of the current work restriction #3 which reads “Downtime schedule information will be made available from the Facility Operations Office.” and replace sentence to read as follows:

“ Restrictive Downtime schedule for the 200-foot safety zone information will be made available to the Contractor at 1400 hours on the previous day, from the Facility Operations Office (757-322-9088).”

Delete the current work restriction #14 sentence in its entirety which reads “14. No land-based cranes will be allowed...” and replace to read as follows:

“ 14. No land-based cranes will be allowed to be used on Pier C, Pier D, and Yorktown Pier (floating cranes only will be allowed.). For Yorktown pier work, vehicles and manlifts are restricted to 15,000 pounds and approval from US Coast Guard will be required for use of potential small deck cranes as well as general Pier access. ”

## **SECTION 01 45 00.00 20 QUALITY CONTROL**

### **1.5 QC ORGANIZATION**

#### **1.5.1 QC Manager**

##### **1.5.1.1 Duties**

Delete the paragraph in its entirety that currently reads:

“ Provide a QC Manager at the work site to implement and manage the QC program. In addition to implementing and managing the QC program, the QC Manager may perform the duties of Project Superintendent. The QC Manager is required to attend the partnering meetings, QC Plan Meetings, Coordination and Mutual Understanding Meeting, conduct the QC meetings, perform the three phases of control, perform submittal review and approval, ensure testing is performed and provide QC certifications and documentation required in this Contract. The QC Manager is responsible for managing and coordinating the three phases of control and documentation performed by testing laboratory personnel and any other inspection and testing personnel required by this Contract. The QC Manager is the manager of all QC activities. ”

and replace with the following to read as follows:

“ Provide a QC Manager at the work site to implement and manage the QC program. The QC Manager must be assigned no other duties. The QC Manager is required to attend the partnering meetings, QC Plan Meetings, Coordination and Mutual Understanding Meeting, conduct the QC meetings, perform the three phases of control, perform submittal review and approval, ensure testing is performed and provide QC certifications and documentation required in this Contract. The QC Manager is responsible for managing and coordinating the three phases of control and documentation performed by testing laboratory personnel and any other inspection and testing personnel required by this Contract. The QC Manager is the manager of all QC activities. “

##### **1.5.1.2 Qualifications**

Delete the paragraph in its entirety that currently reads:

“ An individual with a minimum of 10 years combined experience in the

following positions: Project Superintendent, QC Manager, Project Manager, Project Engineer or Construction Manager on similar size and type Construction contracts which included the major trades that are part of this Contract. The individual must have at least two years' experience as a QC Manager. The individual must be familiar with the requirements of EM 385-1-1, and have experience in the areas of hazard identification, safety compliance, and sustainability. ”.

and replace with the following to read as follows:

“An individual with a minimum of 10 years' experience as a QC Manager, on similar size and type construction contracts which included the major trades that are part of this Contract. The individual must be familiar with the requirements of EM 385-1-1, and have experience in the areas of hazard identification, safety compliance, and sustainability. ”.

## **SECTION 01 57 19.00 20 TEMPORARY ENVIRONMENTAL CONTROLS**

### **3.1 PROTECTION OF NATURAL RESOURCES**

#### **3.11 CONTROL AND MANAGEMENT OF ASBESTOS CONTAINING MATERIAL (ACM)**

Delete the first paragraph in its entirety which currently reads as follows: “ Items, components, or materials disturbed by or included in work under this contract do involve asbestos. Other materials in the general area around where work will be performed may contain asbestos. All thermal insulation, in all work areas, should be considered to be asbestos unless positively identified by conspicuous tags or previous laboratory analysis certifying them as asbestos free.” and replace with the following sentence:

“ No asbestos is anticipated to be encountered during the project (Craney) demolition activities.”

## **SECTION 33 52 43 FUEL DISTRIBUTION**

### **1.6 FUEL SUPPLY**

Delete the first paragraph in its entirety which currently reads “ Fuel required for the hydrostatic test...losses shall be reimbursed to the Government. ” and replace to read as follows:

“ Not Used.”

## **SECTION 33 52 43 FUEL DISTRIBUTION**

### **2.6 GENERAL VALVES**

#### **2.6.4 Plug Valve (Double Block and Bleed Type)**

Delete last sentence of the paragraph in its entirety which currently reads “For plug valve motor operators where indicated on drawings, see Automated Fuel Handling Equipment (AFHE) General Specifications AUTO-D-GEN-GSPC-01-2.3.”.

## **SECTION 33 52 43 FUEL DISTRIBUTION**

### **3.8 FIELD QUALITY CONTROL**

#### **3.8.2.2 Preliminary Pneumatic Test**

Delete the first sentence in its entirety which currently reads “ Apply a 25 psig pneumatic test to product piping. “ and replace sentence to read as follows:  
“ Apply a 25 psig pneumatic test to each pipeline or pipeline segment. “

#### **3.8.2.4 Hydrostatic Test**

Delete the paragraph in its entirety which currently reads “ Hydrostatically test product piping with...accordingly and retest ” and replace paragraph to read as follows:  
“ Upon completion of pneumatic testing and after backfilling for underground pipe, hydrostatically test each pipe and pipeline segment with clean, fresh water. Test at the corresponding pressures identified in Table 2 for the corresponding product piping material type. Maintain the pressure within the piping for 4 hours with no leakage or reduction in gauge pressure. If leaks are discovered, repair the leaks accordingly and retest until the work is proven to be in compliance with the Contract Documents. “

## **SECTION 33 52 80 LIQUID FUELS PIPELINE COATING SYSTEM**

### **1.2 SYSTEM DESCRIPTION**

Delete the last sentence of this paragraph in its entirety which currently reads: “The exterior coating system for buried pipelines is either extruded polyolefin system or fusion bonded epoxy coating.” and replace with the following sentence to read as follows:  
"The exterior coating system for buried pipelines is fusion bonded epoxy coating."

## **SECTION 33 56 10 FACTORY-FABRICATED FUEL STORAGE TANKS**

### **2.7 ABOVEGROUND STORAGE TANK (SDA TANK), TK-6**

#### **2.7.3.8 Tank Level Switches**

Delete the paragraph in its entirety that currently reads “(2) Two-stage or (1) four-stage liquid level switch shall be used to monitor low-low, low, ....mounted on a 4-inch single flanged tank nozzle.” and replace paragraph to read as follows:

“ (2) Two-stage or (1) four-stage liquid level switch shall be used to monitor low-low, low, high, and high-high tank levels. Float or displacer material shall be stainless steel, type 304 or 316, and shall be mounted on a stainless steel shaft or suspension cable. Switch contacts shall be single pole double throw switches (or single pole single throw switch if the single throw contact is fail-safe condition) factory mutual approved or UL-listed for use in Class I, Division 1, Group D hazardous location with a maximum temperature rating of T2D (419 degrees F). Units shall have provisions to check High-High level switch operation without increasing the fuel level in the tanks as shown on the contract drawings. Provide with a fabricated blind flange mounted on a 4-inch single flanged tank nozzle. ”

## **SECTION 33 56 10 FACTORY-FABRICATED FUEL STORAGE TANKS**

### **2.8 ABOVEGROUND STORAGE TANK (F-24 BREAKOUT TANK), TK-5**

#### **2.8.4.7 Tank Level Switches**

Delete the paragraph in its entirety that currently reads “The switches shall be an external mount liquid level switch with four-stage .....mounted on a 4-inch single flanged tank nozzle.” and replace paragraph to read as follows:

“ (2) Two-stage or (1) four-stage liquid level switch shall be used to monitor low-low, low, high, and high-high tank levels. Float or displacer material shall be stainless steel, type 304 or 316, and shall be mounted on a stainless steel shaft or suspension cable. Switch contacts shall be single pole double throw switches (or single pole single throw switch if the single throw contact is fail-safe condition) factory mutual approved or UL-listed for use in Class I, Division 1, Group D hazardous location with a maximum temperature rating of T2D (419 degrees F). Units shall have provisions to check High-High level switch operation without increasing the fuel level in the tanks as shown on the contract drawings. Provide with a fabricated blind flange mounted on a 4-inch single flanged tank nozzle. ”

## **SECTION 33 56 10 FACTORY-FABRICATED FUEL STORAGE TANKS**

### **2.9 ABOVEGROUND STORAGE TANK (CI/LI TANK), TK-7**

#### **2.9.4.7 Tank Level Switches**

Delete the paragraph in its entirety that currently reads “The switches shall be an external mount liquid level switch with four-stage .....mounted on a 4-inch single flanged tank nozzle.” and replace paragraph to read as follows:

“(2) Two-stage or (1) four-stage liquid level switch shall be used to monitor low-low, low, high, and high-high tank levels. Float or displacer material shall be stainless steel, type 304 or 316, and shall be mounted on a stainless steel shaft or suspension cable. Switch contacts shall be single pole double throw switches (or single pole single throw switch if the single throw contact is fail-safe condition) factory mutual approved or UL-listed for use in Class I, Division 1, Group D hazardous location with a maximum temperature rating of T2D (419 degrees F). Units shall have provisions to check High-High level switch operation without increasing the fuel level in the tanks as shown on the contract drawings. Provide with a fabricated blind flange mounted on a 4-inch single flanged tank nozzle.”

## **SECTION 33 56 10 FACTORY-FABRICATED FUEL STORAGE TANKS**

### **2.10 ABOVEGROUND STORAGE TANKS (JP-5 DAY TANK), TK-1, 2, and 3**

#### **2.10.4.7 Tank Level Switches**

Delete the paragraph in its entirety that currently reads “The switches shall be an external mount liquid level switch with four-stage .....mounted on a 4-inch single flanged tank nozzle.” and replace paragraph to read as follows:

“(2) Two-stage or (1) four-stage liquid level switch shall be used to monitor low-low, low, high, and high-high tank levels. Float or displacer material shall be stainless steel, type 304 or 316, and shall be mounted on a stainless steel shaft or suspension cable. Switch contacts shall be single pole double throw switches (or single pole single throw switch if the single throw contact is fail-safe condition) factory mutual approved or UL-listed for use in Class I, Division 1, Group D hazardous location with a maximum temperature rating of T2D (419 degrees F). Units shall have provisions to check High-High level switch operation without increasing the fuel level in the tanks as shown on the contract drawings. Provide with a fabricated blind flange mounted on a 4-inch single flanged tank nozzle.”

- End of Amendment -

# FY-15 MILCON PROJECT P-1515

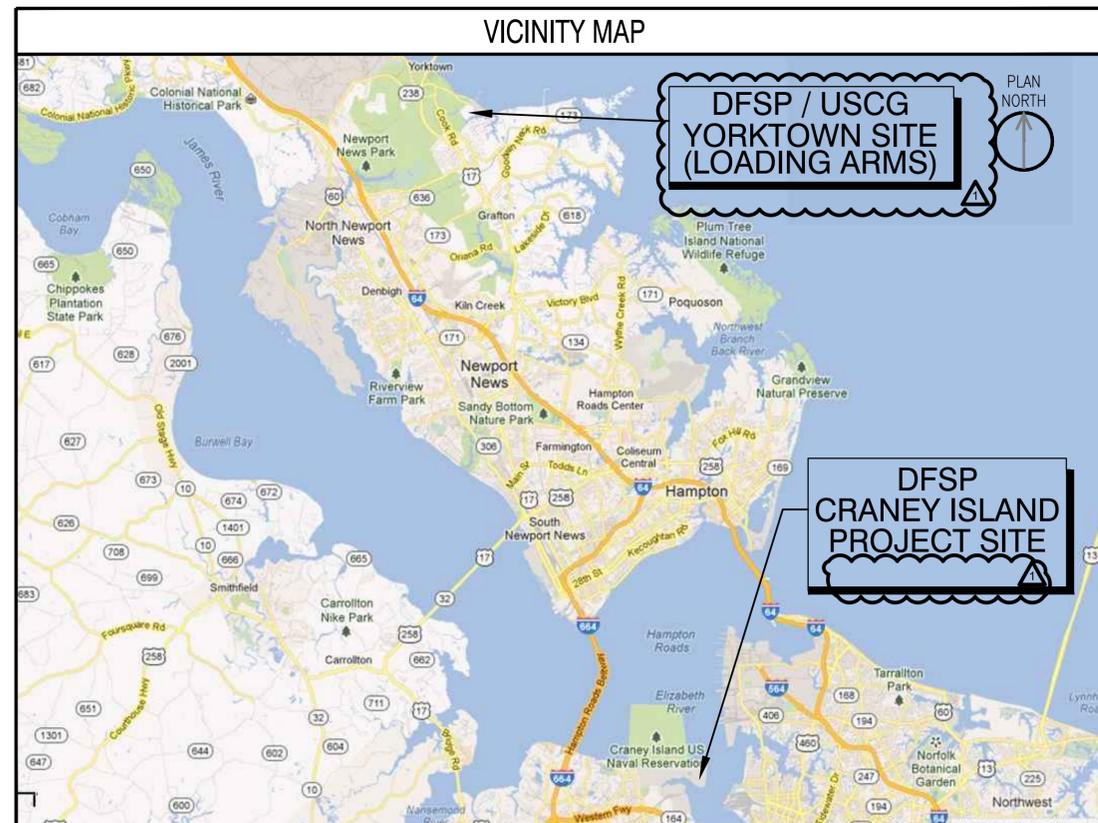
## Replace and Alter Fuel Distribution Facilities DFSP Craney Island, Virginia For Naval Facilities Engineering Command - Mid-Atlantic

December 2014

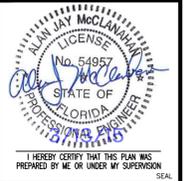
B&McD Project No. 71679

A/E Contract: N62583-10-D-0409, Task WE01

### Final Design Documents



SYN	DESCRIPTION	DATE	A/JM	APPR
0	ISSUED FOR BID	08 DEC 14	A/JM	
1	CONTRACT CLARIFICATION	13 MAR 15	A/JM	



I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY SUPERVISION

**Burns & McDonnell**  
SINCE 1898

PROJ. NO: 71679  
9400 WARD PARKWAY  
KANSAS CITY, MO 64114  
816-333-9400

APPROVED

FOR COMMANDER NAVFAC

ACTIVITY

SATISFACTORY TO DATE

DES: CGB | DRW: CAW | CHK: RDB  
PA/DM: J. MOORE/T. HERNANDEZ  
SFT TECH: BRANCH HEAD  
CHIEF ENG/ARCH (CORE)  
DATE: 12-08-2014

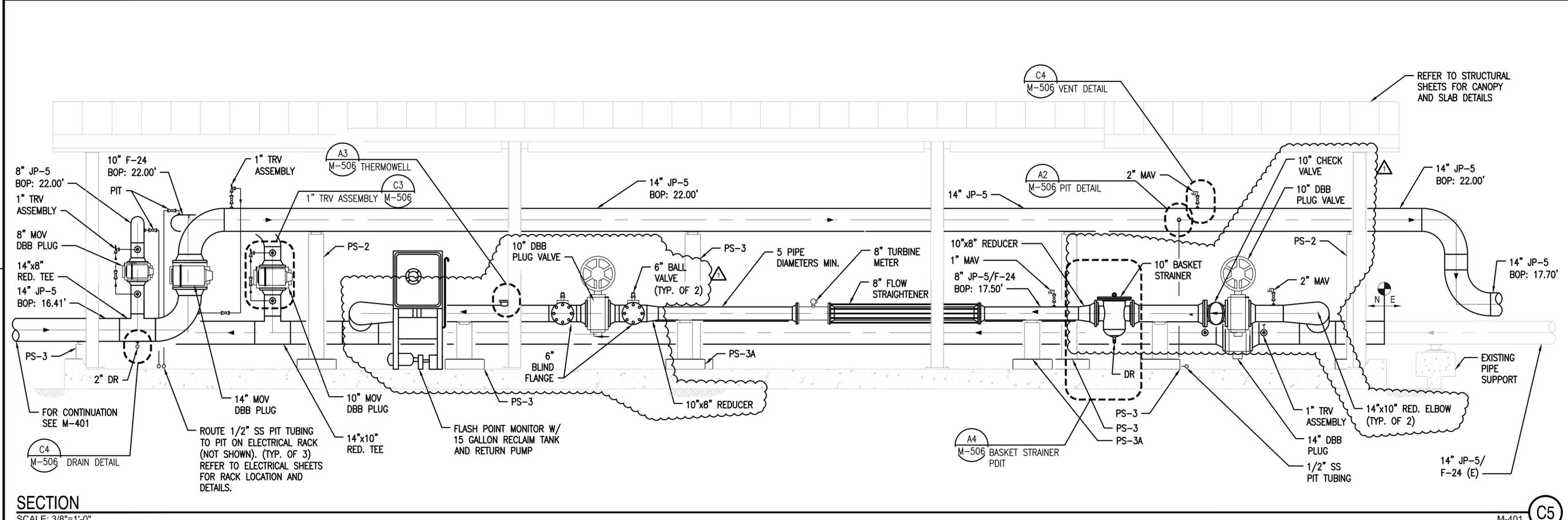
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NAVFORC NAVAL STATION - NORFOLK, VIRGINIA  
DFSP CRANEY ISLAND, VA  
P-1515 REPLACE AND ALTER FUEL DISTRIBUTION FACILITIES

COVER SHEET

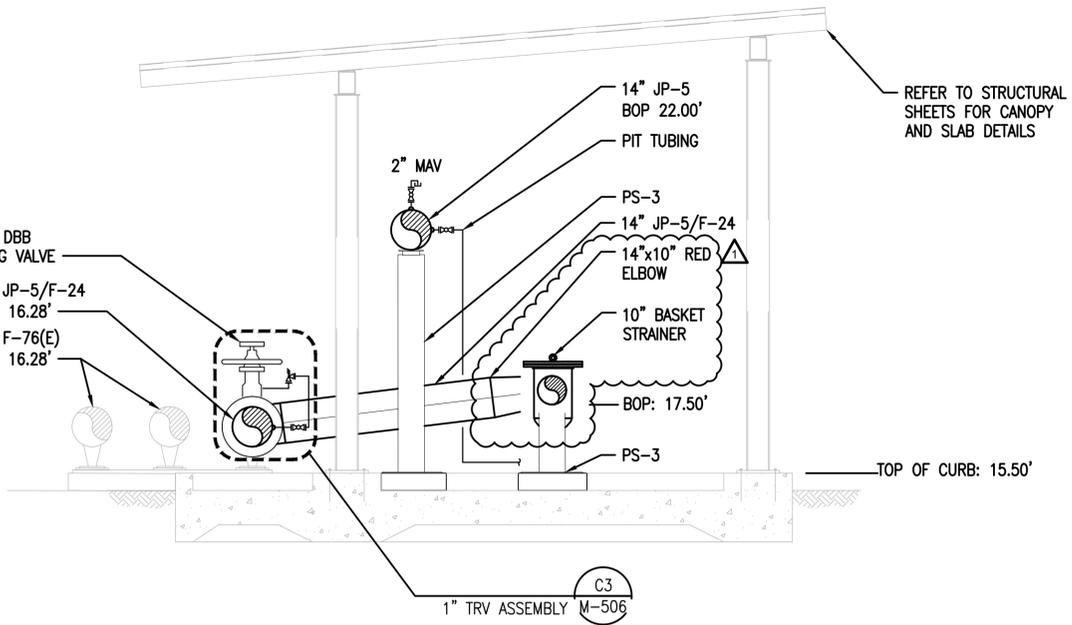
SCALE: AS NOTED  
PROJECT NO.: 1302502  
CONSTR. CONTR. NO.  
NAVFAC DRAWING NO. 12682097  
SHEET 1 OF 296  
G-001

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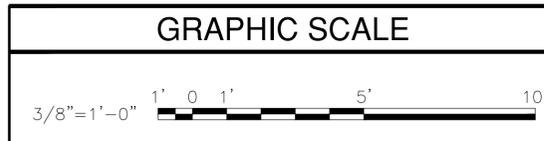
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**SECTION**  
 SCALE: 3/8"=1'-0"



**SECTION**  
 SCALE: 3/8"=1'-0"



DATE	13 MAR 15	JUB	
DESCRIPTION	TIE-IN PIPING REVISIONS	ISSUED FOR BID	08 DEC 14
SYN	0		

STATE OF MISSOURI  
 JAMES L. MOORE  
 REGISTERED PROFESSIONAL ENGINEER  
 03-13-2015  
 I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY SUPERVISION

PROJ. NO: 71679  
 9400 WARD PARKWAY  
 KANSAS CITY, MO 64114  
 816-333-9400

APPROVED: \_\_\_\_\_  
 FOR COMMANDER NAFAC

ACTIVITY: \_\_\_\_\_

SATISFACTORY TO: \_\_\_\_\_ DATE: \_\_\_\_\_

DES: JUB | DRW: VLK | CHK: RAP  
 PM/IN: J. MOORE/T. HERNANDEZ  
 BT: TECH. BRANCH HEAD  
 CHIEF ENG/ARCH (CORP): \_\_\_\_\_  
 DATE: 12-08-2014

DEPARTMENT OF THE NAVY  
 NAVAL FACILITIES ENGINEERING COMMAND - MIDATLANTIC  
 HAMPDEN ROADS BPT  
 NORFOLK NAVAL STATION - NORFOLK, VIRGINIA

P-1515 REPLACE AND ALTER FUEL DISTRIBUTION FACILITIES

SECTIONS - F-24 TIE-IN STATION

SCALE: AS NOTED  
 EPROJECT NO.: 1302502  
 CONSTR. CONTR. NO. \_\_\_\_\_

NAFAC DRAWING NO.: 12682251  
 SHEET 155 OF 296

**M-301**

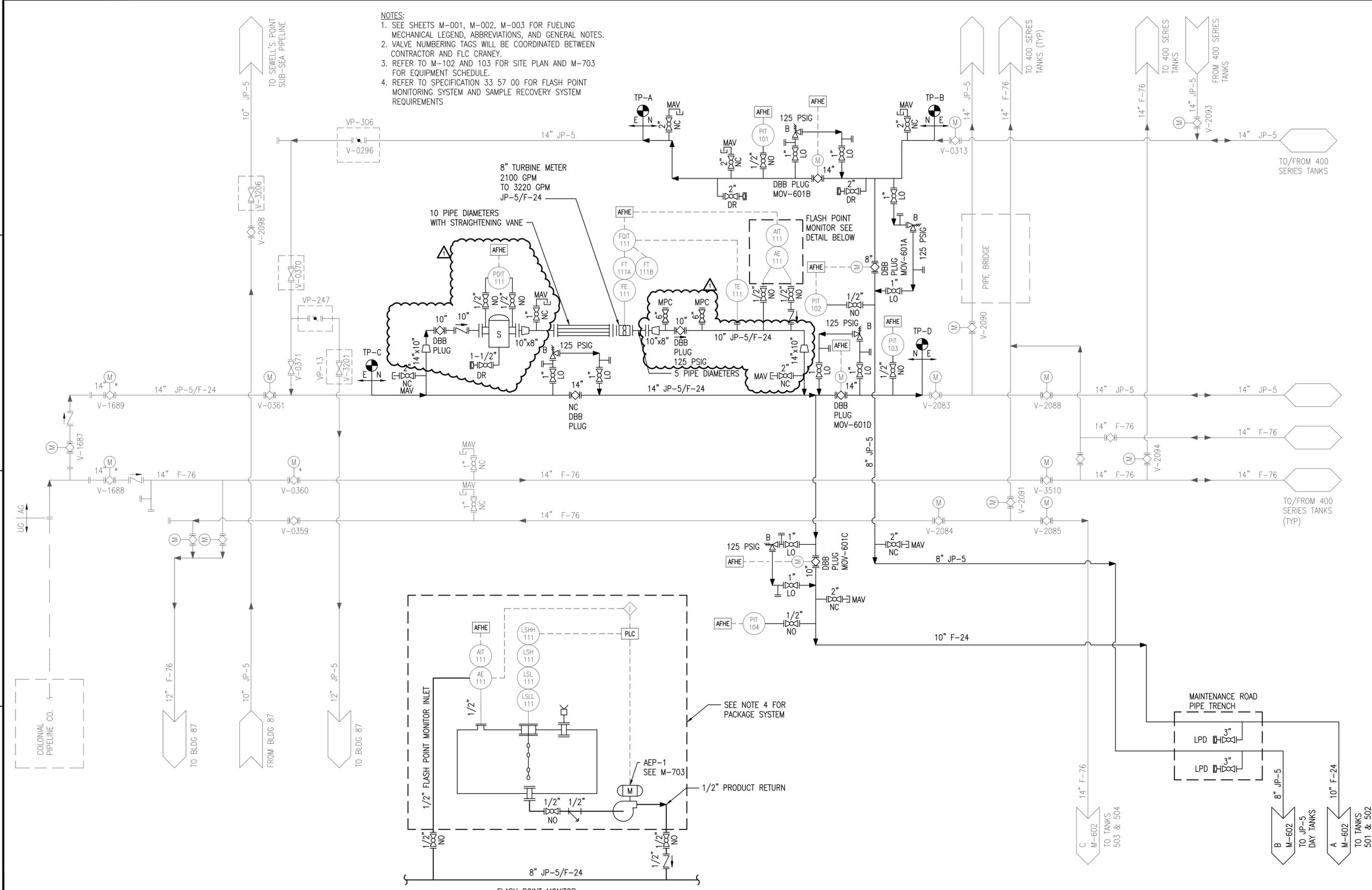
DRAWFORM REVISION: 10 MARCH 2009

5 IF SHEET IS LESS THAN 22" X 34"  
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- NOTES:  
 1. SEE SHEETS M-001, M-002, M-003 FOR FUELING MECHANICAL LEGEND, ABBREVIATIONS, AND GENERAL NOTES.  
 2. VALVE NUMBERING TAGS WILL BE COORDINATED BETWEEN CONTRACTOR AND FLC CRANEY.  
 3. REFER TO M-102 AND 103 FOR SITE PLAN AND M-703 FOR EQUIPMENT SCHEDULE.  
 4. REFER TO SPECIFICATION 33 57 00 FOR FLASH POINT MONITORING SYSTEM AND SAMPLE RECOVERY SYSTEM REQUIREMENTS



**P&ID - F-24 TIE-IN STATION**  
 NOT TO SCALE

A5

NO. 1	DATE	BY	APPR.
NO. 2	DATE	BY	APPR.
NO. 3	DATE	BY	APPR.
NO. 4	DATE	BY	APPR.
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NO. 17	DATE	BY	APPR.
NO. 18	DATE	BY	APPR.
NO. 19	DATE	BY	APPR.
NO. 20	DATE	BY	APPR.

**Burns & McDonnell**  
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PROJ. NO: 71679  
 9400 WARD PARKWAY  
 KANSAS CITY, MO 64114  
 816-333-9400

APPROVED: \_\_\_\_\_  
 FOR COMMANDER NAVFAC

SATISFACTORY TO: \_\_\_\_\_ DATE: \_\_\_\_\_

DES: JJB | DRW: VLK | CHK: RAP  
 PM/DM: J. MOORE/T. HERNANDEZ  
 DTI TECH. BRANCH HEAD  
 CHIEF ENGR/ARCH (CORE)  
 DATE: 12-08-2014

DEPARTMENT OF THE NAVY  
 NAVAL FACILITIES ENGINEERING COMMAND  
 NAVAL FACILITIES ENGINEERING COMMAND - MIDATLANTIC  
 NORFOLK NAVAL STATION - NORFOLK, VIRGINIA  
 DFSP CRANEY ISLAND, VA

**P-1515 REPLACE AND ALTER FUEL DISTRIBUTION FACILITIES**

SCALE: AS NOTED  
 PROJECT NO.: 1302502  
 CONSTR. CONTR. NO.

NAVFAC DRAWING NO.: 12682301  
 SHEET 205 OF 296

**M-601**

DRAWING REVISION: 10 MARCH 2009

SECTION 33 08 55

COMMISSIONING OF FUEL FACILITY SYSTEMS

07/07

PART 1 GENERAL

1.1 SUMMARY/APPLICABILITY

This specification defines the requirements and procedures for startup and commissioning of fuel facility systems. It covers requirements for safety, Government scheduling and coordination, device testing, system flushing and cleaning, demonstration of indicated and specified system performance and final acceptance and reporting.

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for Contractor Quality Control approval. The following shall be submitted in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Commissioning Plan; G

SD-06 Test Reports

Piping Flushing Checklist; G  
Piping Cleaning Checklist; G  
Control Valve Checklist; G  
Commissioning Report; G

SD-07 Certificates

Certification of Completion  
Disposal of Waste Materials

1.3 SAFETY

Prior to any on-site commissioning activities, the following safety procedures shall be accomplished in all fueling areas to be commissioned under this specification section: placement of Contractor-provided portable eyewash units within 100 feet or 10 seconds from the fueling point, verification of proper grounding throughout system, coordination with Government Fire and Safety Office and Fuels personnel, placement of Contractor-provided spill pads and containment booms, placement of Contractor-provided fire extinguishers capable of extinguishing a fuel fire. Ensure that all radios/devices at all Class I, Division 1 areas are intrinsically safe.

1.4 COMMISSIONING PLAN

The Contractor shall submit a detailed written plan for implementation of system commissioning. The commissioning plan shall specify a detailed plan incorporating in a sequenced manner all work specified in PART 3 EXECUTION of this specification section. The plan shall be submitted for Government approval 90 calendar days prior to commencement of fuel system

commissioning. The plan shall include:

- a. Personnel. List of Contractor's personnel by trade, list of key personnel, list of safety equipment, list of miscellaneous equipment such as two-way radios, and personnel transportation vehicles.
- b. Performance Testing. Detailed equipment startup procedures and schedules to perform all system tests under each operating scenario in accordance with paragraph entitled "Performance Tests".
- c. Test forms. Develop all test forms required for documenting the fuel system commissioning work. The format of the test forms shall follow the sequencing and terminology of the commissioning plan and shall furnish data grids and ample areas for test data recording.
- d. Schedule. Schedules shall generate and list dates and durations of all commissioning activities as well as regular coordination and safety meetings and dates of key events for Government participation.
- e. Fuel. Quantities of fuel needed for all commissioning activities and fuel delivery schedules. Plan shall include requirements and schedules for Government-provided materials and equipment.
- f. Contingency plans. Information on spill and fire contingencies, along with the required Government Fire and Safety Office involvement and approvals.
- g. Coordination with Base. Description of how Contractor shall implement system start-up in coordination with ongoing base operations. Plan shall incorporate all phasing and work restriction requirements of the Contract Documents.

#### 1.5 CERTIFICATION OF COMPLETION

As a prerequisite to fuel system commissioning, the Contractor shall submit a Certificate of Completion that certifies all work provided on the fuel system, except for field painting, has been inspected and approved by the specified approving authorities. Further, the Contractor shall certify on this certificate that all specified checks and inspections have been successfully completed prior to commissioning. The Contractor shall give the Contracting Officer at least 45 calendar days notice prior to commencement of fuel system commissioning. The Contractor shall submit the Certificate of Completion to the Contracting Officer at least 7 calendar days prior to commencement of system commissioning. The Contracting Officer shall then be responsible for scheduling the Government representatives and appropriate military command authority and designers for participation in the inspection, performance testing, and final approval activities. Any contractual deficiencies observed shall be corrected by the Contractor without cost to the Government.

#### 1.6 COMMISSIONING REPORT

Contractor shall prepare a commissioning report that documents the execution of the approved commissioning plan. All items of work specified in the commissioning plan shall be carried out and reported in this report unless otherwise approved by the Contracting Officer. Include as a part of this report verification letters of approved fuel storage tank hydrostatic tests (if performed) and the piping hydrostatic tests, as generated under

other specification sections. The commissioning report shall include the final settings of the control valves and pressure and flow switches with an explanation of what each graph indicates and what the system is doing.

#### 1.7 DISPOSAL OF WASTE MATERIALS

The Contractor shall be responsible for properly disposing of any sludge, debris, and waste fuel resulting from piping and tank cleaning and flushing activities. Comply with all applicable local, State, and Federal Regulations for hazardous waste disposal.

### PART 2 PRODUCTS

#### 2.1 DESIGN CONDITIONS

Temporary flushing lines and equipment shall be equal in strength, stability, and materials to the associated permanent components and compatible with the fluid service intended; however, temporary spools may be carbon steel.

#### 2.2 CONTRACTOR PROVIDED MATERIALS AND EQUIPMENT

The Contractor shall provide all material, equipment and labor required for proper start-up of the system(s), except for that specified to be Government furnished. Equipment shall include but not be limited to the following:

- a. Temporary filtration/strainers.
- b. Temporary piping, pipe spools and blind flanges.
- c. Test instruments such as flow meters, gauges, calibration devices, and sampling equipment.
- d. Test equipment such as pumps, hoses and temporary tanks.
- e. Electronic sensors for pressure and flow measurements. This equipment shall be used to monitor and record the system during the "Equipment Test" and "Performance Testing" portions of this Specification Section. Recorded data shall be used by the Contractor and equipment factory representatives to achieve final control valve and equipment adjustments. Recorded data shall include:
  1. Fueling Pumps discharge pressures.
  2. Control valve pressures.
  3. Pier loading and unloading flow rates and pressures.
  4. Truck loading flow rates and pressures.
  5. Pipeline Receipt flow rates and pressure.
- f. Clean fresh water used for pipeline flushing and hydrostatic testing.

##### 2.2.1 Tank Trucks

Transport tank trucks and operators will be furnished by the Contractor.

## 2.3 GOVERNMENT FURNISHED MATERIALS AND EQUIPMENT

The Government will furnish the following materials, equipment and services used during the execution of the commissioning plan. Any damage caused by the Contractor's operations shall be repaired at no additional cost to the Government.

### 2.3.1 Fuel

The Government will provide the fuel necessary for system cleaning and testing. The Contractor shall notify the Contracting Officer a minimum of sixty (60) days in advance of the requirements. Upon satisfactory completion of the cleaning operations, the Government will supply the additional quantities of fuel required to complete the other work under this specification section.

Fuel will not be delivered to the system until the Contractor has satisfactorily completed all work and, in particular, the cleaning and coating of the interior surfaces of the storage tanks and the removal of preservatives and foreign matter from those portions coming in contact with the fuel valves, pumps, and other such equipment. Fuel delivered to the system shall remain the property of the Government and the Contractor shall reimburse the Government for shortages not attributable to normal handling losses. The Government shall be reimbursed for fuel lost as a result of defective materials or workmanship.

### 2.3.2 Utilities

Electric power required for the performance of the work under this specification section will be furnished at no charge to the Contractor.

### 2.3.3 Fueling Barge

Fueling barge and operator shall be furnished by the Government.

### 2.3.4 Fuel Testing Laboratory

During all phases of commissioning and system cleaning of the facilities, the Government will provide services of their fuel testing laboratory and technician to monitor the quality of the jet fuel.

### 2.3.5 Additives

The Government will provide the static dissipator (SDA), and the corrosion inhibitor (CI) required for testing the additive mixing tanks and the additive injector. The Contractor shall notify the Contracting Officer a minimum of 60 days in advance of the requirements.

## PART 3 EXECUTION

### 3.1 PRELIMINARY REQUIREMENTS

All activities listed in paragraph "PART 3 EXECUTION" shall be performed sequentially in the order they are presented. Prior to any on-site commissioning activities, the Contractor shall ensure that all requirements of the paragraph entitled "Safety" are satisfied. Project shall be substantially complete and Contractor's work area shall be free of debris, trash and obstacles. Perform the following activities prior to receipt of fuel.

### 3.1.1 Electrical Preparations

Prior to energizing the electrical equipment, verify that short-circuit links have been removed from current transformer and that secondary circuits have been connected. Confirm that all tests required for fire detection and suppression systems have been performed and accepted. Verify all electrical transmitter connections and ensure proper calibration. Verify all electrical equipment meets Class I Division 1 requirements where required. Verify correct rotation of all motors prior to testing. Verify paddle type flow switches by physically actuating vanes and checking outputs. Conduit explosion-proof sealoffs shall be poured after initial electrical checks but before fuel receipt.

### 3.1.2 Emergency Fuel Shutoff (EFSO) System Testing

Prior to initial fuel receipt, verify that each switch will trip the circuit breaker of the fuel pumps and de-energize the EFSO relay.

### 3.1.3 Storage Tanks

Ensure approved performance of storage tank integrity testing, hydrostatic tests (if performed) and coating application/inspection per the applicable specifications. Include verification letter of approved test results for information in commissioning report. Ensure that tank interior is clean and free of any fuel-contaminating debris. Verify operation of tank level alarms by closing tank connection valves and filling housings with fuel to confirm action. Ensure that certified strapping charts for all tanks are available for start-up personnel. Verify correct orientation of internal tank inlet diffuser.

### 3.1.4 Piping System

Ensure that all piping weld integrity and coating inspections have been performed per the applicable specifications. Include verification of approved test results for information in the commissioning report. Evacuate all accumulated water from piping low point drains, valve cavities, and equipment drains. Verify all bolted connections are tightness tested to required torque using a calibrated torque wrench. Verify that all pressure gauges are properly located and installed. Ensure that piping's cathodic protection system is tested and operational. Ensure that pipe marking and identification is provided as specified. Ensure that piping system thermal relief provisions are installed and operating as designed. Verify the correct installation of piping expansion loops, joints, and supports.

#### 3.1.4.1 Pier Piping Systems

For pier delivery/receipt systems or other over-water piping installations, ensure compliance with the Contractor's previously approved spill control plans.

### 3.2 PREPARATIONS FOR FLUSHING

Upon completion of the construction to the satisfaction of the Contracting Officer, the Contractor shall make the following preparations for system flushing.

### 3.2.1 3.2.1 Protection Of Equipment

The following components shall be removed from the system prior to start of flushing operations and, where applicable, replaced with pipe spools of internal diameter equal to the item removed.

- a. Control valves, excluding the Filter Separator Control Valves and the Micronic Control Valves.
- b. Flow and pressure sensors which are exposed to the system flush.
- c. Fuel meters.
- d. Fuel pumps.
- e. Sensors exposed to the fluid.

After flushing, hydrostatic testing, and draining of water, the above items shall be reinstalled in the system and the spool sections turned over to the Contracting Officer.

### 3.2.2 Swab Pig Run - Pneumatic (Optional)

Upon completion of a piping segment and all associated integrity and coating tests, an initial foam swab pig cleaning can be performed prior to flushing lines with water to remove bulk contaminates. This will provide bulk cleaning of the interior of the piping system. The pig should be constructed of light (2-5 lbs/cu. ft. density) open cell polyurethane foam, with polyurethane back and transmitter cavity. Propellant shall be pressurized nitrogen. The swab pig shall be examined after the initial run for signs of possible pipe blockage or damage which may prevent future pig runs. The Contractor shall prepare a contingency plan for retrieving a stuck pig and repairing any piping deformations per the applicable specifications. Additional runs shall be performed until the amount of collected debris is minimized, as determined by the Contracting Officer.

## 3.3 FLUSHING

The intent of the flushing operation is to remove bulk solids from the newly installed piping and piping segments. Flushing procedures shall precede fuel receipt and cleaning procedures. All new and modified fuel piping, including the pipeline receipt, pier issue and receipt, piping, and pier pipelines shall be flushed with fresh clean water. Water is not allowed to be flushed into any existing fuel storage tank. Contractor provided temporary tanks shall be used to capture flush water.

### 3.3.1 Piping Hydrostatic Tests with Water

Piping and piping segments shall be packed with fresh clean water, following procedures outlined in paragraph "Preparation for Flushing" above. Perform piping hydrostatic tests with water per the applicable specifications, ensuring the piping system is completely vented of air through the piping high point vent system. Contractor shall submit a pipeline testing checklist to ensure the requirements of this and other applicable specifications are met.

### 3.3.2 Flushing Requirements

Begin flushing of piping and piping segments at low flow rates using

Contractor provided water pump with the speed set to a low flow. Slowly increase flushing flow rate to full flow capacity. Flushing shall continue until the water being delivered is free of construction debris to the satisfaction of the Contracting Officer.

### 3.3.3 Piping Flushing Checklist

The Contractor shall generate a comprehensive matrix of all new and existing piping sections in the system affected by this Contracts work. Matrix shall serve as an Owner's piping inventory and a checklist for all Contractor-provided flushing operations. Column entries shall include pipe section name, location, diameter, approximate length, flushing velocity and volume achieved and acceptable results of sampling.

### 3.3.4 Piping Draining

After completion of flushing and hydrostatic testing Contractor is responsible for removing all water from the fuel piping and providing means to dry the piping prior to filling with fuel.

## 3.4 INITIAL FUEL RECEIPT

### 3.4.1 General

After completion of pipeline and pipeline segment flushing and hydrostatic tests, utilize one storage tank for initial fuel receipt to isolate possibly contaminated fuel. Initial receipt of fuel shall be done by gravity if possible. The Contractor shall station personnel throughout piping system at high point vents to bleed air. All flanges and equipment will be periodically inspected for leaks during filling procedures.

### 3.4.2 Storage Tanks

Receipt flow rate into an empty storage tank shall not exceed 3 feet per second (FPS), as measured in the main receipt piping, until outlet of tank fill nozzle is submerged and pan/roof legs are lifted.

### 3.4.3 Components

Ensure vessels are filled slowly by closing outlet valves and venting through air eliminators. Downstream valves shall be throttled to maintain a packed condition in vessels throughout initial fill of piping system. Differential pressure across strainers shall be continuously monitored. Any time a strainer DP reaches 20 psig, it shall be cleaned.

### 3.4.4 Fuel Quality

Fuel used during initial receipt shall be considered contaminated and shall be positively isolated, with blind flanges or closed, padlocked manual valves, from any truck fueling operations. Fuel isolation shall continue until all flushing and cleaning is completed.

### 3.4.5 F-24 Fuel Receipt

#### 3.4.5.1 F-24 Fuel Receipt by Pipeline

Start-up personnel shall meet with Government personnel in charge of existing fuel storage to discuss fuel transfer procedures. Topics shall include: methods of communication to start/stop remote pipeline transfer

pumps; flow rate and head characteristics of transfer pumps; methods of restricting initial receipt flow rate; methods of straining initial receipt fuel; accommodating multiple pump starts resulting from required strainer cleaning operations; required quantity of fuel to be transferred. Contractor shall provide a written summary of pipeline receipt procedures to the Contracting Officer.

#### 3.4.5.2 Initial Receipt of F-24 Jet Fuel

After completing the removal of equipment as identified in the preceding paragraphs and the installation of all temporary strainers identified in the preceding paragraphs, align the block valves to receive fuel from the fuel supply pipeline into fuel storage tank 501 (T-501). When receiving the initial fuel, ensure that air is completely vented from the fuel piping as the fuel enters the piping. During fuel receipts, periodically operate the low point drains to remove water and debris and operate high point vents to remove trapped air. When the Contractor has determined that 50,000 BBL minimum have been received into T-501, inspect and clean all the strainers in the flow path from the pipeline to T-501 in the presence of the Contracting Officer.

During the initial fuel transfer operation, monitor the pressures in the lines. The presence of debris in any strainer will indicate that the fuel supply pipeline has not been adequately flushed by the Contractor.

If construction debris is detected in any strainers in the flow path, clean the strainer and continue flowing into T-501 until no debris is detected in the strainers, as witnessed by the Contracting Officer.

All remaining fuel system piping shall be packed with fuel, following procedures outlined in paragraph "General" above. F-76 fuel lines shall be filled from either storage tank T-503 or T-504. JP-5 fuel lines shall be filled from Government designated 400 series JP-5 bulk storage tanks. Ensure the piping system is completely vented of air through the piping high point vent system. Contractor shall submit a tank and piping testing checklist to ensure the requirements of this and other applicable specifications are met.

### 3.5 LINE CLEANING

After the completion of initial flushing with water, lines drained and filled with fuel, all new and modified piping shall be cleaned with fuel. The intent of the cleaning operation is to remove trace solids and water from the system. All new and modified fuel piping, including the tie-in transfer line, F-24 receipt system piping, pier issue and receipt piping, and truck fillstand piping shall be cleaned with fuel.

#### 3.5.1 Preparation for Cleaning

Valves and equipment removed for flushing shall be reinstalled. Strainers shall be cleaned, reinstalled, and remain in the system. Control valves shall be adjusted to the proper setting.

#### 3.5.2 Cleaning Requirements

Fuel shall be pumped through all new and existing piping sections in the system. Fuel velocity during all cleaning operations shall be full pumping capacity. Cleaning shall continue until Contracting Officer certifies that the fuel contains 2 milligrams per gallon or less of particulate and 10

parts per million or less of free water. Perform sampling at all system discharge points, at tanks, and throughout pumphouse and piping system. Sampling and testing shall be done by the appropriate military service.

### 3.5.3 Line Cleaning Procedures

Align valves for F-24 fuel flow from tank T-501 through the fuel transfer pumps (FTP-5A and FTP-5B) to the Pier D south equipment pad and then back to tank T-502. Close normally open double block and bleed valve at Pier D equipment pad to accomplish this task. Flowrate shall be at minimum of 4200 gpm using only FTP-4A or FTP-4B and pump fuel from T-501 to T-502 until T-501 reaches its 5 percent low level. Continue to operate all low point drains to remove debris and water that has collected and continue to operate high point vents to remove pockets of air that collect during the flushing. At the half way point and at the end of this flush, check all strainers in the flow path for debris; debris on the strainers shall indicate that the fuel supply line has not been adequately cleaned by the Contractor.

Repeat cleaning operation by aligning valves for fuel flow from T-502 through FTP-4A and FTP-4B to Pier D south equipment pad and then back to T-501 using same direction of flow through piping. Continue until T-502 reaches its 5 percent low level. Operate all low point drains to remove debris and water that has collected and continue to operate high point vents to remove pockets of air that collect during the flushing. At the half way point and at the end of this flush, check all strainers in the flow path for debris; the presence of any debris on the strainers shall indicate that the fuel supply line has not been adequately cleaned by the Contractor.

During the course of the cleaning procedures described above, the Contractor shall flush all jumper lines for a minimum of 30 minutes each at their maximum flowrate.

Completely drain T-502 down to its center sump by pumping the fuel into T-501 by using the low suction pump(FTP-4C). Visually inspect the interior of T-502. If there is any sign of debris in the tank, the Contractor shall clean the tank to the satisfaction of the Contracting Officer. Once the tanks have been accepted, allow T-501 to stand undisturbed at least 96 hours to allow water and debris to accumulate in the sump. Remove water and sediment from T-501's sump and turn over to the Contracting Officer for recycling. Completely drain T-501 down to its center sump by pumping the fuel into T-502 by using FTP-4C. Visually inspect the interior of T-501. If there is any sign of debris in the tank, the Contractor shall clean T-501 to the satisfaction of the Contracting Officer.

Truck fillstand piping shall be cleaned by loading a minimum one tanker truck, 8000 gallons. Samples shall be taken during truck fill operation and tested by Government personnel. A minimum of two clear sample tests required for acceptance.

After main piping system has been flushed to the satisfaction of the Contracting Officer, the Contractor shall flush all high point vents and low point drains for a minimum of 10 seconds. On completion of flushing, also drain, open, and inspect the strainers. Remove any construction debris and weld slag observed and thoroughly clean the internals of the equipment. When the Contracting Officer is satisfied with the results of the flushing, reinstall all control valves and equipment removed for flushing. Turn the pipe spools over to the Contracting Officer, remove all

temporary strainers, and clean all permanent strainers.

#### 3.5.4 F-24 Pier Piping

Newly installed F-24 Pier piping and loading arms should be hydrostatically tested with fresh water per the applicable specification. After testing, flush piping with fresh water at 12 FPS for 30 minutes. The Contractor will be allowed to use Government-furnished hoses. Drain all water from piping system and refill with product. Perform cleaning with fuel product at 12 FPS for 30 minutes. The Contractor shall be allowed to use Government barges/equipment to facilitate system cleaning.

#### 3.5.5 Piping Cleaning Checklist

The Contractor shall generate a comprehensive matrix of all new and existing piping sections in the system affected by this contracts work. Matrix shall serve as an Owner's piping inventory and a checklist for all Contractor-provided cleaning operations. Column entries shall include pipe section name, location, diameter, approximate length, fuel type and volume achieved and acceptable results of sampling.

#### 3.6 CONTROL VALVE ADJUSTMENT

All control valve settings shall be checked and field adjusted from the factory settings at start-up as necessary to provide a smooth operation. Adjustments to valves shall be made only by the Valve Manufacturer's authorized Field Test Engineer.

##### 3.6.1 Control Valve Checklist

The Contractor shall generate a comprehensive matrix of all control valves in the system. Matrix shall serve as a checklist of all required control valve features, settings, and functions as specified. Column entries shall include control valve name, valve tag, pilot features, solenoid control features (if applicable), factory settings, and field adjusted settings. Submit matrix with commissioning "Final Reports".

#### 3.7 VALVE AND EQUIPMENT TAGS

During final phases of construction, and prior to start-up and commissioning effort, FLC Craney personnel will generate unique equipment and valve numbering sequence for items installed under this contract which follows the facility's existing AFHE identification protocol. Contractor shall furnish and install identification tags for the equipment and valves with the numbering sequence provided by Craney. Refer to specification Section 33 52 43 FUEL DISTRIBUTION for tag size and material requirements.

#### 3.8 EQUIPMENT TESTS

After completion of flushing and control valve and electrical component adjustments, the equipment tests and performance tests specified hereinafter shall be performed. Both the mechanical and electrical components shall be adjusted concurrently. Tests will be witnessed by the Contracting Officer and other Government representatives.

##### 3.8.1 Emergency Fuel Shutoff System

With one truck fillstand issue pump operating, test each "Emergency Stop" pushbutton station to verify that the pump stops and valve closes. Repeat

this procedure for each fueling pump and "Emergency Stop" pushbutton station. Conduct tests for both the automatic and manual modes.

### 3.8.2 F-24 Tank Level Controls

Position valves to transfer fuel between tanks. Start one fuel transfer pump, and pump sufficient fuel out of the first operating tank to allow the low liquid level alarm and pump control switch to stop the pump. Continue to pump to receiving tank to allow the high level alarm and high-high level alarm to stop the pumps and perform their other functions as specified. Functionally test, with fuel, all liquid level alarms (including those associated with the level switches and those associated with the tank gauging system) to ensure they actuate properly. Repeat this procedure for each of the pumps and each tank until all controls and alarms perform at the designated set points as specified.

### 3.8.3 Annunciation

Verify and record that alarms function as intended by design.

### 3.8.4 Tank Gauging

Verify the automatic tank gauging system with manual gauging of each tank.

### 3.8.5 Fuel Receipt

#### 3.8.5.1 F-24 Pipeline Receipt

Demonstrate the following features for F-24 Pipeline receipt:

- a. Local actuation of motor operated valves required for Pipeline receipt.
- b. Pressure indicating transmitter performance and verification of proper calibration.
- c. Pipeline turbine meter performance and verification of proper calibration and temperature compensation.
- d. Flash point monitor and verification of local initiation of test and calibration of instrument.
- e. Additive injection system and verification of proper injector calibration for receipt of F-24 jet fuel.

#### 3.8.5.2 Pier Receipt Systems

Demonstrate the following features for receipt from each pier through the main receipt piping system.

- a. Local actuation of motor operated valves for receipt from each pier.
- b. Pressure indicating transmitter performance and verification of proper calibration.
- c. Pier receipt turbine meter performance and calibration, verification of temperature compensation.
- d. Marine loading arm function and operating range at each pier.

### 3.8.6 JP-5 Day Tank Systems

Demonstrate the following features for the storage tank systems:

- a. Local actuation of motor operated valves for tank selection (issue and receipt).
- b. Level alarm actuation.
- c. Fillstand pump shutdown at low-low level.
- d. Tank receipt isolation valve closure on high-high level.
- e. High Level Shut-Off Valve's solenoid control, surge control, flow control, and shut-off on high-high level.
- f. Automatic tank gauging system.
- g. Mechanical tank level gauge.
- h. Water draw-off system.

Provide certified strapping charts to the Contracting Officer prior to performance testing. Demonstrate all other tank features and functions are per the applicable specifications.

### 3.8.7 Fuel Issue Systems

#### 3.8.7.1 Bulk Fuel Transfer Pump Control Systems

Demonstrate the following features for the Fuel Transfer Pump systems. All bulk fuel transfer pump controls were provided and commissioned by a previous MILCON project. Demonstration of operation is required only to verify proper operation has not been disturbed or affected by this projects work. Contracting Officer shall be notified if operational issues are found with existing controls.

- a. Local operation of Hand/Auto switch.
- b. Pump shutdown and alarm upon low flow signal from flow switch or low absolute pressure signal from pressure switch.
- c. Level alarm actuation.
- d. Pump shutdown on tank low-low level alarm.
- e. Pump shutdown from EFSO switch.

#### 3.8.7.2 Pier Loading

Demonstrate the following features for issuing to each pier through the main issue piping system separately:

- a. Local actuation of motor operated valves required for issuing to each pier.
- b. Pressure indicating transmitter performance and verification of proper calibration.

- c. Automatic flow and pressure control for issues by transfer pumps for flows 4200 gpm and less.

#### 3.8.7.3 Truck Fillstands

Demonstrate the following features for loading tanker trucks at each truck loading stands:

- a. Local actuation of motor operated valves required for truck loading.
- b. Manual start/stop pushbutton control.
- c. Static and continuity ground verification (with actual ground/continuity readings) and overfill prevention system.
- d. Control valve deadman control, surge shutdown, and pressure control features.
- e. Loading meter performance, preset controls, and verification of proper calibration.
- f. Pressure indicating transmitter performance and verification of proper calibration.
- g. Truck Loading Valve solenoid open/close control, flow control, and pressure reducing feature.
- h. Truck Loading Valve solenoid interconnections with meter preset and deadman switch for manual and automatic open/close control.

#### 3.8.8 Additive Systems

##### 3.8.8.1 Truck Unloading

Demonstrate the following features for unloading CI/LI additive from tanker trucks at the truck unloading stand:

- a. Manual start/stop pushbutton control.
- b. Pump shutdown on simulated high motor temperature condition from motor temperature switch and tank high-high level switch.

##### 3.8.8.2 Additive System Storage Tank Systems

Demonstrate the following features for the F-24 Breakout tank, CI/LI additive tank and SDA storage tank systems:

- a. Level alarm actuation.
- b. Pump shutdown at low level.
- c. High Level shut-off valve's solenoid control, flow control, and shut-off on high-high level.
- d. Automatic tank gauging system.
- e. Mechanical tank level gauge.

Provide certified strapping charts to the Contracting Officer prior to

performance testing. Demonstrate all other tank features and functions are per the applicable specifications.

#### 3.8.8.3 F-24 Transfer Pump Control

- a. Local start/stop control.
- b. Pump shutdown on low level condition in F-24 breakout tank.
- c. Transfer meter performance, preset controls, and verification of proper calibration.
- d. Pump shutdown on simulated high motor temperature condition from motor temperature switch.
- e. Pump shutdown on a no-pulse signal from the meter.
- f. Pump shutdown on activation of local or remote EFSO switch.

### 3.9 PERFORMANCE TESTS

During performance testing, the Contractor shall demonstrate that all portions of the fuel system are operating as designed and specified. Tests shall be performed under all operating scenarios. Additional tests may be required by the Contracting Officer and Command Fuels Engineer to fully demonstrate system performance. These tests shall be accomplished by the Contractor at no additional cost to the Government. The Contractor shall notify the Contracting Officer 15 calendar days in advance of the test to permit arrangement for the use of Government furnished items. Record required data necessary to prepare reports specified in paragraph entitled "Commissioning Report".

#### 3.9.1 Satisfactory Performance

In the event a portion of the system or any piece of equipment fails to meet the test, the Contractor shall make the necessary repairs or adjustments and repeat the Performance Test until satisfactory performance is obtained. Measured flow rates should be within 5 percent of design. Tank level gauging and alarm measurements should be within 1/16 inches of design. Any component found not to be working as specified shall be repaired/replaced by the Contractor at no additional cost to the Government. The determination of satisfactory performance shall be made by the Contracting Officer and the Military Command Authority and Government representatives. The system shall be filled with fuel and shall be operable and leak-free prior to acceptance. The Contractor shall be responsible for any leaks in the new or modified portions of the system. Anything wet with fuel is considered to be leaking.

#### 3.10 TRAINING / INSTRUCTION FOR GOVERNMENT PERSONNEL

The contracting authority should provide one or two key personnel from their "operations" and "maintenance" departments to participate in all phases of system commissioning. The Contractor will be responsible for coordinating the involvement and training of these individuals during the startup process, including hands-on familiarization and adjustment of devices, valves, and components.

In addition, the Contractor shall conduct two 8-hour formal training sessions at the conclusion of system performance testing. These sessions

shall include initial classroom system presentations as well as a complete system walk-through. The function, operation and maintenance procedures for all system devices and components will be explained. Training shall be videotaped and submitted in CD ROM or DVD format.

### 3.11 PROJECT CLOSEOUT

Ensure that As-Built drawings, equipment warranty documentation, and other project closeout activities are completed per the requirements of the applicable specifications.

-- End of Section --

SECTION 33 57 00.10

MARINE LOADING ARMS TAKEDOWN, STORAGE AND REINSTALLATION  
02/10

PART 1 GENERAL

This specification shall apply to all work related to Marine Loading Arm Equipment (MLAE) takedown, transport using water-based craft, refurbishment and certification, re-installation, and system commissioning. See Attachment A at the end of this Specification Section for additional loading arm technical information.

The Government will provide the services of a qualified and approved Marine Loading Arm Equipment Specialist, (MLAE Specialist), to supervise and advise the special procedures required for the contractor to: a. Take down the existing Marine Loading Arm Equipment (MLAE) from DFSP Yorktown; b. Provide recommendations and supervision for rigging and transportation to an approved special storage facility at DFSP Craney Island; c. Provide recommendations for special storage requirements during the construction period; d. Oversee onsite overhaul, check out and certification of MLAE prior to re-installation at DFSP Craney Island; and e. Transportation, rigging, re-installation and commissioning of all MLAE on the new piers.

Services of the MLAE Specialist will include supervision and recommendations for start up testing, check out procedures, certifications, including any and all requirements for final operations of the MLAE.

The MLAE Specialist will be on-site to support and supervise the following activities which will be performed by the Contractor:

- a. On-site walk thru at DFSP Yorktown.
- b. Takedown of MLAE No. 2 and MLAE No. 4 at DFSP Yorktown, rigging and transportation by water-based craft to DFSP Craney Island for storage.
- c. Check-out, onsite overhaul and certification of MLAE No. 2 and No. 4 prior to installation activities on Pier C and Pier D South at DFSP Craney.
- d. Installation, startup and commissioning of MLAE No. 2 on Pier C.
- e. Installation, startup and commissioning MLEA No. 4 on Pier D South.
- f. Takedown of MLAE No. 3 and MLEA No. 1 at DFSP Yorktown, rigging and transportation by water-based craft to DFSP Craney for storage.
- g. Check-out, onsite overhaul and certification of MLAE No. 3 prior to installation activities on Pier D North at DFSP Craney.
- h. Installation, startup and commissioning of MLAE No. 3 on Pier D North.

The MLAE shall be defined to include the marine loading arms, as well as any associated hydraulics and hydraulic controls and panels, pumps and associated piping and valves, and electrical controls that may be suitable for reuse. For bidding purposes, assume primary loading arms can be re-used.

Comply with applicable requirements of the following specification Sections:

01 14 00 WORK RESTRICTIONS  
01 35 26 GOVERNMENTAL SAFETY REQUIREMENTS  
01 32 17.00 20 NETWORK ANALYSIS SCHEDULES

#### 1.1 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for Contractor Quality Control approval. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

##### SD-01 Preconstruction Submittals

MLAE Work Plan; G

Work plan for procedures to takedown, transport, storage, and install of all related equipment, including schedules of proposed work. (To be included with requirements of Section 01 32 17.00 20 NETWORK ANALYSIS SCHEDULES.)

Crane Critical Lift Plan; G

##### SD-02 Shop Drawings

Detail Drawings; G

Rigging Drawings, including crane certifications, transportation procedures

Diagrams and instructions from MLAE Specialist

##### SD-05 Design Data

Crane rigging calculations and diagrams

##### SD-06 Test Reports

Crane Reports

Pre-Takedown and Pre-Installation Inspections Report; G

Field Tests Reports; G

Test reports in booklet form showing all field tests performed to adjust each component and all field tests performed to prove compliance with the specified performance criteria, within 14 days after the successful completion of testing the installed system.

Acceptance Testing; G

Loss of Power Test; G

Grounding Test; G

##### SD-07 Certificates

Certificate of Compliance (Crane)

SD-08 Manufacturer's Instructions

MLAE; G

Preprinted or custom printed material describing recommended  
installation of all MLAE

SD-11 Closeout Submittals

Field Tests Reports; G

Grounding Test; G

Pressure Test Reports; G

1.2 QUALITY ASSURANCE

1.2.1 MLAE Specialist

Contractor shall perform work specified in the section under the direct  
guidance and approval of the MLAE Specialist who is engaged in the  
supervision of work required by this section of the specifications.

1.2.2 Pre-Takedown and Pre-Installation Inspections

Contractor is responsible for performance of quality control inspections.  
Submit Pre-Takedown and Pre-Installation Inspections Report for approval by  
Contracting Officer.

1.2.3 MLAE Work Plan

Work plan for procedures to takedown, transport, store, overhaul and  
re-installation of related equipment, including schedules of proposed work.  
(To be included with requirements of Section 01 32 17.00 20 NETWORK  
ANALYSIS SCHEDULES.)

1.3 SAFETY

1.3.1 Crane Critical Lift Plan

Provide Crane Critical Lift Plan as required in Section 01 35 26 GOVERNMENT  
SAFETY REQUIREMENTS.

1.4 REPORTS

1.4.1 Crane Reports

Provide Crane Reports as required in Section 01 35 26 GOVERNMENT SAFETY  
REQUIREMENTS.

1.4.2 Certificate of Compliance

Provide Certificate of Compliance as required in Section 01 35 26  
GOVERNMENT SAFETY REQUIREMENTS.

PART 2 PRODUCTS

2.1 DETAIL DRAWINGS

Submit detail drawings, including dimensioned layouts in plan and elevation including rigging drawings, transportation tie-down requirements and storage blocking requirements.

Provide special instructions for long-term storage and packing requirements.

Provide diagrams and instructions.

Submit all documents to Contracting Officer for approval.

PART 3 EXECUTION

3.1 EXAMINATION

After becoming familiar with all details of the work, and before performing any work, Contractor shall verify all dimensions in the field, and submit a letter describing the results of this verification, including discrepancies, to the Contracting Officer.

3.2 INSTALLATION

Perform the entire MLAE installation in accordance with MLAE specialists instructions under the supervision of the MLAE specialist.

Provide a written certificate from MLAE Specialist indicating the MLAE is erected in accordance with MLAE Specialist's recommendations before testing the completed installation.

3.3 ADVANCE NOTICE

Provide Contracting Officer with 30 days written notice before takedown and before reinstallation of each MLAE.

3.4 FIELD QUALITY CONTROL

3.4.1 Testing Materials and Instruments

Provide testing materials and instruments required for final inspection.

3.4.2 Field Tests

Submit Field Tests Reports after completing each of the specified tests, as required in the Submittals paragraph.

3.4.2.1 Hydraulic Pressure Tests

Check all hydraulic operating pressures under no load conditions and under standard operating load conditions.

3.4.2.2 Mechanical Alignment

Align all elements of operating equipment, motors, couplings, and drive components when reinstalled in accordance with MLAE Specialist's instructions.

### 3.5 ACCEPTANCE TESTING

#### 3.5.1 General

Provide all personnel necessary to conduct the required testing, including but not limited to, crane operators, riggers, and tradesmen.

Perform testing in the presence of Contracting Officer.

A representative of the Contractor responsible for installing MLAE shall be present along with MLAE Specialist to direct the field testing.

Furnish three copies of all test reports to Contracting Officer.

#### 3.5.2 Test Data

Record operating and startup measurements for all operating components.

Compare recorded values with manufacturer's specifications or Manufacturer's recommended values.

Justify abnormal differences in the remarks and perform appropriate adjustments.

Note any abnormal operation of any equipment or machinery, investigate and correct.

#### 3.5.3 Grounding Test

Test MLAE to determine that the MLAE and all related components are properly grounded during all phases of operation.

#### 3.5.4 Adjustments and Repairs (onsite overhaul)

Perform adjustments and repairs under the direction of the MLAE Specialist at no additional cost to the Government, until satisfactory conditions are maintained, and contract compliance is affected.

#### 3.5.5 Pressure Test

Pressure test the MLAE as directed by the MLAE Specialist. Submit Pressure Test Reports for approval by Contracting Officer.

#### 3.5.6 Loss of Power Test

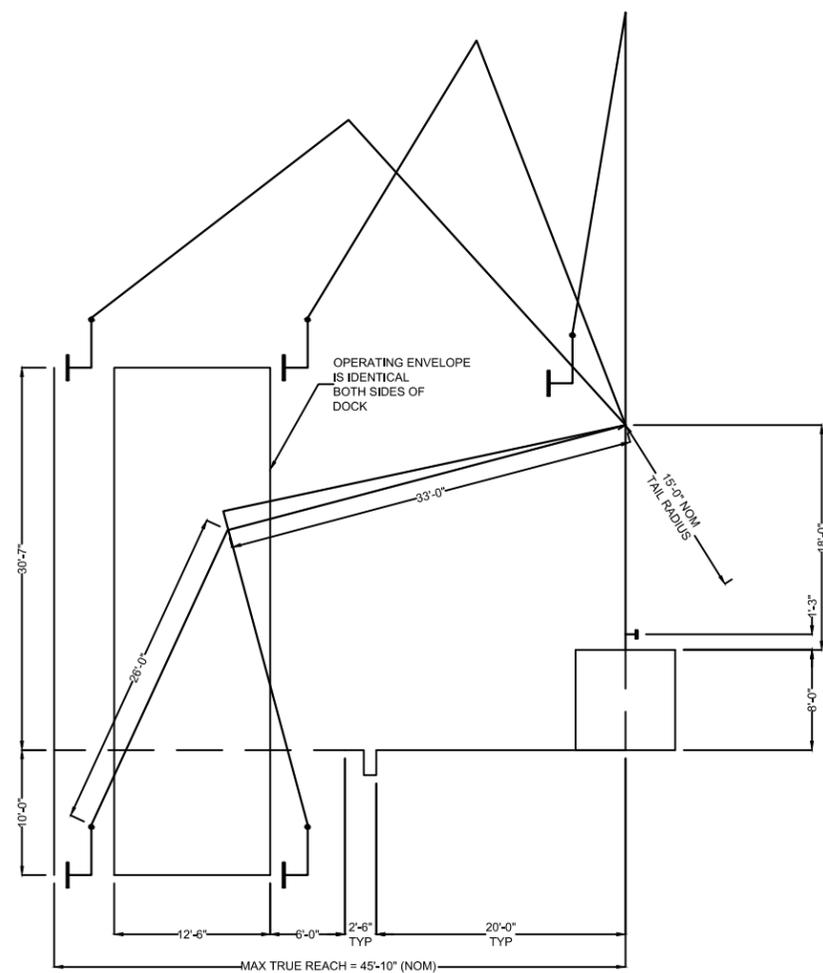
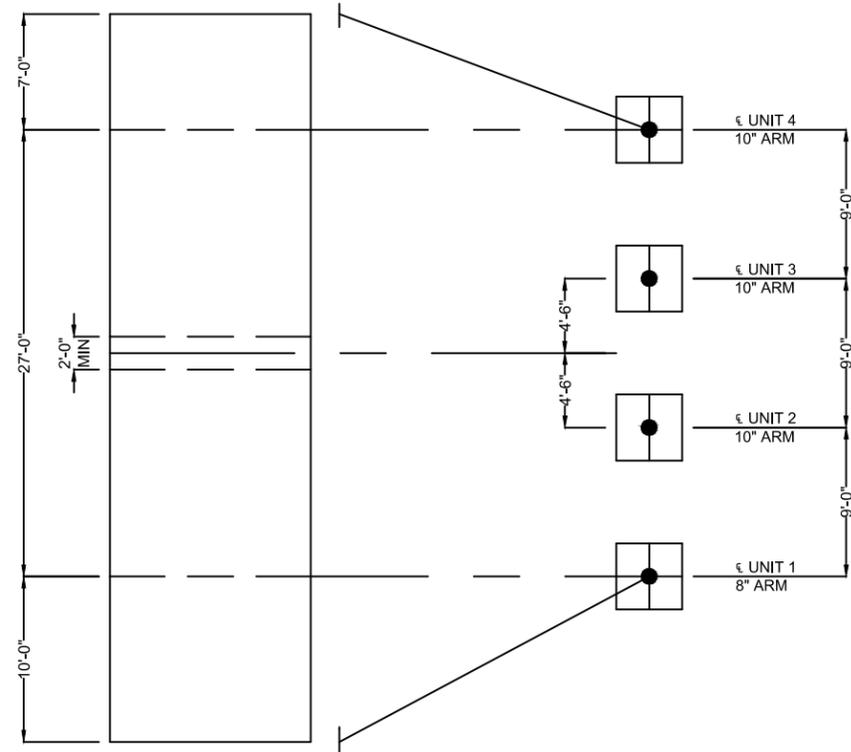
Perform a loss of power test for each Marine Loading Arm as directed by the MLAE Specialist.

### 3.6 FINAL ACCEPTANCE

Final acceptance of MLAE system will not be given until Contractor and MLAE Specialist have successfully completed all testing operations, corrected all material and equipment defects, made all proper operation adjustments, final certification for re-use has been provided by the MLAE specialist, and MLAE No. 2, MLAE No. 4, and MLAE No. 3 are fully commissioned.

-- End of Section --

**Attachment A**  
 (Specification Section 33 57 00.10)  
**LOADING ARM TECHNICAL INFORMATION - DFSP YORKTOWN**  
 13Mar15



DESIGN LOADS		FOR JETTY/ PLATFORM AT BASE OF UNIT IN PARKED POSITION		
CONDITION		ARM NO.1	ARM NO. 2-4	ARM NO.
WIND VELOCITY	MPH	100	100	
WIND PRESSURE	PSF.	42	42	
UNIT DEADWEIGHT	LB.	26,000	21,500	
TOTAL OTM	LB.FT.	260,000	370,000	
SHEAR DUE TO WIND	LB.	9,000	10,000	
TORQUE DUE TO WIND	LB.FT.	15,000	15,000	

OTM, SHEAR & TORQUE FIGURES ARE BASED ON WIND PRESSURE & SHAPE FACTORS IN ANSI. A 58.1 AND/ OR UNIFORM BUILDING CODE LATEST EDITION

**P-1515 REFERENCE INFORMATION:**  
 THE INFORMATION SHOWN ON THIS DRAWING IS TO BE USED FOR REFERENCE PURPOSES ONLY. IT PROVIDES A GENERAL UNDERSTANDING OF THE EXISTING SYSTEM AND ITS USE IS LIMITED TO THE REQUIRED DEMOLITION OR ALTERATION WORK. SINCE THIS DRAWING MAY HAVE BEEN ALTERED FROM ITS ORIGINAL SCALE, CONTRACTOR TO USE THE CONTENTS HEREIN AT THEIR OWN RISK.

REVISIONS LOG				CONFIDENTIAL-PROPRIETARY	TOLERANCES (UNLESS NOTED OTHERWISE)	NORTH WIND FABRICATION INC. 17095 CARLTON CUEVAS RD. GULFPORT, MS 39503
REV	DESCRIPTION	DATE	APPROVAL			
			DRAFTER	APPL	.X ± .040° BREAK SHARP .XX ± .020° CORNERS .06 X 45 DEG. .XXX ± .005° SURFACE FINISH FRACTIONAL ± _____ ✓ ANGULAR ± 1/2 DEG.	Description
						APPROVAL
					DRAWING DATE 03/13/2012	JOB NO.
					SCALE	DWG. NO. NWFSK-0032
						DWG. SIZE
						REV.