

## SECTION 01 11 00

## SUMMARY OF WORK

07/06

## PART 1 GENERAL

## 1.1 WORK COVERED BY CONTRACT DOCUMENTS

## 1.1.1 Project Description

In order to implement Conservation Voltage Regulation (CVR) at Cherry Point, upgrades to the Energy Monitoring and Control System (EMCS) and Supervisory Control And Data Acquisition (SCADA) system are required to ensure service voltages stay within the ANSI C84.1 limits as the distribution voltages are regulated to lower values. These upgrades will allow critical system service voltages to be monitored. The upgrades include adding new electric meters to the EMCS. These new EMCS electric meters and selected existing EMCS electric meters will be integrated into the SCADA system by establishing BACnet/IP connections to these meters from the SCADA system. Some of these existing meters are located in the Fleet Readiness Center East (FRCE) and to access these meters a link between the FRCE EMCS and the MCAS's SCADA will be established. The SCADA "Wonderware" application will be modified to display, alarm, save to history and report on the data obtained from these meters. Upgrades to some obsolete SCADA and EMCS hardware and software are required to ensure continued reliable operation of these systems.

## 1.1.2 Location

The work shall be located at the Marine Corps Air Station, Cherry Point, approximately as indicated. The exact location will be shown by the Contracting Officer.

## 1.2 EXISTING WORK

In addition to "FAR 52.236-9, Protection of Existing Vegetation, Structures, Equipment, Utilities, and Improvements":

- a. Remove or alter existing work in such a manner as to prevent injury or damage to any portions of the existing work which remain.
- b. Repair or replace portions of existing work which have been altered during construction operations to match existing or adjoining work, as approved by the Contracting Officer. At the completion of operations, existing work shall be in a condition equal to or better than that which existed before new work started.

## 1.3 LOCATION OF UNDERGROUND FACILITIES

It shall be the responsibility of the contractor to locate all existing underground utilities that are within the limits of work, prior to any excavation activities. These include but are not limited to the following buried utilities: water lines, sanitary and storm sewers, steam condensate, fuel lines, gas lines, electrical ducts and direct buried

conductors, commercial telephone, Base telephone, commercial cable TV, Base instructional cable TV, EMCS and fire alarm. The contractor shall employ the services of a qualified Utility locating company to locate, identify, and mark all underground utilities. The entire construction limits shall be thoroughly scanned and researched to determine existing utility locations. Any existing utilities that are indicated on the project drawings shall be considered for reference use by the locating company and shall be verified. All underground utilities shall be clearly marked with flags, paint or stakes prior to any digging operation except that required to determine exact utility location and depth. CAUTION shall be used when trenching or excavating around or near buried utilities. The contractor shall be responsible for the timely repair and/or replacement of direct and collateral damage on any and all underground utilities that are severed, crushed, broken, displaced or otherwise disturbed by the construction operation. The Government shall not incur any additional cost for such repair or replacement. The contractor shall notify the ROICC a minimum of three working days prior to utility location. Do not continue with excavation or installation of new work without resolving elevation discrepancies and conflicts.

#### 1.4 Notification Prior to Excavation

Notify the Contracting Officer at least 48 hours prior to starting excavation work.

#### PART 2 PRODUCTS

Not used.

#### PART 3 EXECUTION

Not used.

-- End of Section --

## SECTION 01 14 00

## WORK RESTRICTIONS

07/10

## PART 1 GENERAL

## 1.1 CONTRACTOR ACCESS AND USE OF PREMISES

## 1.2 Regulations

Ensure that Contractor personnel employed on the Activity become familiar with and obey Activity regulations. Keep within the limits of the work and avenues of ingress and egress. Wear hard hats in designated areas. Do not enter any restricted areas unless required to do so and until cleared for such entry. The Contractor's equipment shall be conspicuously marked for identification.

## 1.3 Working Hours

Regular working hours shall consist of an 8 1/2 hour period normally between the hours of 7:00 am to 4:30 pm, Monday through Friday, excluding Government holidays.

## 1.4 Work Outside Regular Hours

Work outside regular working hours requires Contracting Officer approval. Make application 15 calendar days prior to such work to allow arrangements to be made by the Government for inspecting the work in progress. During periods of darkness, the different parts of the work shall be lighted in a manner approved by the Contracting Officer.

## 1.5 Occupied Buildings

The Contractor shall be working in and around existing buildings which are occupied. Do not enter the buildings without prior approval of the Contracting Officer

The existing buildings and their contents shall be kept secure at all times. Provide temporary closures as required to maintain security as directed by the Contracting Officer.

## 1.6 Utility Cutovers and Interruptions

- a. Permission to interrupt any Activity utility service shall be requested in writing a minimum of 15 calendar days prior to desired date of interruption.
- b. Make utility cutovers and interruptions after normal working hours or on Saturdays, Sundays, and Government holidays. Conform to procedures required in the paragraph "Work Outside Regular Hours."

- c. Ensure that new utility lines are complete, except for the connection, before interrupting existing service.
- d. Interruption to water, sanitary sewer, storm sewer, telephone service, electric service, air conditioning, heating, fire alarm, compressed air shall be considered utility cutovers pursuant to the paragraph entitled "Work Outside Regular Hours."
- e. Operation of Station Utilities: The Contractor shall not operate nor disturb the setting of control devices in the station utilities system, including water, sewer, electrical, and steam services. The Government will operate the control devices as required for normal conduct of the work. The Contractor shall notify the Contracting Officer giving reasonable advance notice when such operation is required.

## 1.7 SECURITY REQUIREMENTS

### 1.7.1 Station Regulations

No employee or representative of the contractor will be admitted to the work site without an Identification Badge or is specifically authorized admittance to the work site by the OIC, NAVFAC Contracts.

### 1.7.2 Contractor Access to MCAS Cherry Point and Outlying Areas

DOCUMENTATION REQUIRED TO GRANT ACCESS TO COMMERCIAL AND CONTRACT EMPLOYEES (THIS DOCUMENT IS AN AID IN MEETING AIR STATION ORDER 5500.14B REQUIREMENTS AND IS NOT A SUBSTITUTE FOR THE ORDER)

1. The initial approved contract letter from the authorized military contracting agency. The letter must contain the following before being sent to Pass & ID:

- A) The employer's company/business name
- B) Contract number and work location
- C) Contract expiration/termination date
- D) Flightline access: Vehicle gate access (must be gate specific) and/or turnstile access (Normal contractor access is turnstiles only.)
- E) FRC-East access (if required)

2. Employers must provide a letter (on company letterhead) to the Pass & ID office. This may be by e-mailed to (chpt\_pass-id\_omb@usmc.mil), or fax (252-466-2626) or it may be hand carried, listing all employees (to include date and place of birth) who will be requiring access to the installation. Contractors hired for more than 30 days will be issued a contractor's badge after the conditions outlined in this document are met. The badge must be carried or readily accessible at all times while on Station. All badges will be issued for a period NOT TO EXCEED ONE YEAR regardless of the length of the contract. Upon the expiration of the badge, the company/employee will provide a new 50 state/national criminal record check prior to being re-badged.

3. Any access from 1 day to less than 30 days, employers will provide the same documentation as stated above. In place of a badge, a copy of this letter with the worker's name highlighted, stamped with the "Pass & ID" stamp, "Criminal Records Check (CRC) Sighted", and we will also annotate below the stamps the following statement: "Valid until (expiration date) then date and initial it." This document will be issued to each worker and

IS their authorization to be aboard the installation. This letter must be carried on their person or readily accessible at all times while on Station.

4. All employers/employees must provide a CRC from any internet investigative service or any other investigative service company that provides a 50 state/national criminal records check and a check of the Sexual Offenders List. (Local county/state checks are not authorized and will not be accepted.) This record check must be a "complete" check covering the period from at the minimum their 18th birthday to present. The CRC must also contain a statement that this is a "national records check" or the terminology the agency uses to indicate such. Please be sure of what you are requesting. If it is anything less than a national check, it will be rejected. The CRC can not be more than 30 days old at the time it is presented to Pass & ID personnel. CRCs may be obtained from, but not limited to the following sources (\*):

- A) WWW.INTEGRASCAN.COM
- B) WWW.SENTRYLINK.COM
- C) WWW.CRIMINALWATCHDOG.COM
- D) WWW.CASTLEBRANCH.COM
- E) WWW.PEOPLESCANNER.COM
- F) WWW.KROLLBACKGROUNDSCREENING.COM
- G) WWW.BACKGROUNDCHECKS.COM
- H) WWW.INSTANTPEOPLECHECK.COM
- I) WWW.AMERICANBACKGROUND.COM
- J) WWW.LEXISNEXIS.COM

Cost of a background check can vary anywhere from \$19 to \$60 based on the type or amount of services requested. Minimum information required for a background check is the individual's Last Name, First Name, Middle name (optional) and Date of Birth. A social security number verification is also available at an additional cost.

5. In accordance with ASO 5500.14B (not an all inclusive list), access will be denied if the individual:

- A) Is on the National Terrorist Watch List.
- B) Is illegally present in the United States.
- C) Is currently debarred or banned from military installations.
- D) Is a registered sex offender or been convicted of any child abuse or related offense(s).
- E) Is a convicted felon within the past 5 years.
- F) Convicted of any drug offense within the past 5 years.
- G) Is subject to an outstanding warrant or is currently pending trial.
- H) Has knowingly submitted a false/fraudulent employment questionnaire.
- I) Any reason the Installation Commander deems reasonable for good order & discipline.
- J) Individuals convicted of a DUI/DWI within the past year will be allowed aboard but not be permitted to drive.

- 6. Picture ID from a state or federal agency (i.e., valid driver's license or state identification card).
- 7. Social Security Card or any official document listing the SSN (letter from Social Security Administration listing the SSN, W-2 (tax form), DD-214, pay stub listing complete SSN). An additional source may be through the internet with E-Verify
- 8. Birth certificates and passports are used when necessary to verify citizenship and are never used as a means to verify social security

numbers.

9. If the employee is not a U.S. Citizen, PROOF OF IMMIGRATION STATUS must be provided and carried on their person or be readily accessible at all times while on station. Proof must also be provided if an individual is a naturalized U.S. citizen.
10. Due to recent changes with Privacy laws, please do not include social security numbers or DOBs in the company letters being faxed or emailed to this office. Additionally, all criminal record checks must be hand carried by the individual worker or brought in by the supervisor.
11. As of 19 Dec 07 security clearances are no longer valid as a means for requesting access to the installation. All personnel hired as commercial or contractor employees to work for a company aboard the installation will be required to provide a 50 state/national criminal check.
12. The changes in this document are effective as of 1 June 2010.

Note: Until further notice, ID cards and vehicle passes issued to contractors at Camp Lejeune and New River are currently not valid at Cherry Point without a 50 state/national CRC in their possession at the time they are requesting access at MCAS Cherry Point.

(\*) The United States Government and the United States Marine Corps does not endorse nor are they affiliated with any of the screening services provided above. We must be able to verify/validate the information contained in the CRC via telephone. If we are unable to validate the CRC the clearance information will not be accepted.

(\*\*) Due to recent developments concerning the screening services of Criminal CBS and Net Detective, they are no longer authorized as a means for entry at MCAS Cherry Point.

#### 1.8 FLEET READINESS CENTER, EAST (FRC, EAST) SECURITY REQUIREMENTS

No employee or representative of the Contractor will be admitted to the work site without an Identification Badge or is specifically authorized admittance to the work site by the OIC, NAVFAC Contracts. All work is within the FRC, East security zone. The Contractor will be responsible for obtaining security badges for all his employees and subcontractor employees, maintaining a continuous accountability log of all badges, and turning in of all badges at the conclusion of the project. Specific instructions for obtaining security badges will be provided at the preconstruction conference. No personal vehicles will be allowed within the FRC, East security zone; only company vehicles, clearly marked, will be allowed inside the security zone.

##### 1.8.1 Cellular Telephone Restrictions

The use of cellular telephones inside FRC, East facilities and the FRC, East compound (inside the fenced area) is prohibited, except in case of emergency.

#### PART 2 EXECUTION

Not Used

-- End of Section --

## SECTION 01 20 00.00 20

## PRICE AND PAYMENT PROCEDURES

07/06

## PART 1 GENERAL

## 1.1 REFERENCES

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

U.S. ARMY CORPS OF ENGINEERS (USACE)

EP-1110-1-8 (2003) Construction Equipment Ownership and Operating Expense Schedule, Vol 1-12

## 1.2 SCHEDULE OF PRICES

## 1.2.1 Data Required

Within 15 calendar days of notice of award, prepare and deliver to the Contracting Officer a schedule of prices (construction contract) on the forms furnished by the Government. Provide a detailed breakdown of the contract price, giving quantities for each of the various kinds of work, unit prices, and extended prices therefore.

## 1.2.2 Schedule Instructions

Payments will not be made until the Schedule of Prices has been submitted to and accepted by the Contracting Officer. Identify the cost for site work, and include incidental work to the 5 foot line. Identify costs for the building(s), and include work out to the 5 foot line. Work out to the 5 foot line shall include construction encompassed within a theoretical line 5 feet from the face of exterior walls and shall include attendant construction, such as cooling towers, placed beyond the 5 foot line.

## 1.3 CONTRACT MODIFICATIONS

In conjunction with the Contract Clause "DFARS 252.236-7000, Modification Proposals-Price Breakdown," and where actual ownership and operating costs of construction equipment cannot be determined from Contractor accounting records, equipment use rates shall be based upon the applicable provisions of the EP-1110-1-8.

## 1.4 CONTRACTOR'S INVOICE

## 1.4.1 Content of Invoice

Requests for payment in accordance with the terms of the contract shall consist of the following:

- a. Contractor's Invoice on NAVFAC Form 7300/30, which shall show, in summary form, the basis for arriving at the amount of the invoice.
- b. Contractor's Monthly Estimate for Voucher (LANTNAVFACENGCOM Form 4-4330/110 (New 7/84)), with subcontractor and supplier payment

certification.

- c. Affidavit to accompany invoice (LANTDIV NORVA Form 4-4235/4 (Rev. 5/81)).
- d. Updated copy of submittal register.
- e. Updated copy of progress schedule. Furnish as specified in "FAR 52.236-15, Schedules for Construction Contracts."

#### 1.4.2 Monthly Invoices and Supporting Forms

Forms will be furnished by the Contracting Officer. Requests for payment shall be processed in accordance with "FAR 52.232-5, Payments Under Fixed-Price Construction Contracts." Monthly invoices and supporting forms for work performed through the anniversary award date of the contract shall be submitted to the Contracting Officer between the 1st - 7th if contract's last digit is 0, 1, 2; 8th - 14th if contract's last digit is 3 or 4; 15th - 21st if contract's last digit is 5, 6, or 7; 22nd and last if the contract's last digit is 8th or 9th day of the month. Payments will be using Wide Area Workflow (WAWF). Submit the following documents with invoice WAWF:

- a. Contractor's invoice
- b. Contractor's monthly estimate for voucher
- c. Affidavit
- d. Updated submittal register
- e. Progress schedule
- f. Certificate of Progress Payments
- g. Contractor Safety Self Evaluation Checklist

#### 1.5 PAYMENTS TO THE CONTRACTOR

Payments will be made on submission of itemized requests by the Contractor which comply with the requirements of this section, and will be subject to reduction for overpayments or increase for underpayments made on previous payments to the Contractor.

##### 1.5.1 Obligation of Government Payments

The obligation of the Government to make payments required under the provisions of this contract will, at the discretion of the Contracting Officer, be subject to reductions and/or suspensions permitted under the FAR and agency regulations including the following in accordance with "FAR 32.503-6:

- a. Reasonable deductions due to defects in material or workmanship;
- b. Claims which the Government may have against the Contractor under or in connection with this contract;
- c. Unless otherwise adjusted, repayment to the Government upon demand for overpayments made to the Contractor; and

- d. Failure to provide up to date record drawings not current as stated in Contract Clause "FAC 5252.236-9310, Record Drawings."

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

-- End of Section --

SECTION 01 30 00  
ADMINISTRATIVE REQUIREMENTS  
04/06

PART 1 GENERAL

1.1 SUBMITTALS

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

SD-01 Preconstruction Submittals

List of contact personnel

1.2 MINIMUM INSURANCE REQUIREMENTS

Procure and maintain during the entire period of performance under this contract the following minimum insurance coverage:

- a. Comprehensive general liability: \$500,000 per occurrence
- b. Automobile liability: \$200,000 per person, \$500,000 per occurrence for bodily injury, \$20,000 per occurrence for property damage
- c. Workmen's compensation as required by Federal and State workers' compensation and occupational disease laws.
- d. Employer's liability coverage of \$100,000, except in States where workers compensation may not be written by private carriers,
- e. Others as required by North Carolina State law.
- f. The Cancellation clause on the insurance certificate should read:

"Cancellation or any material change in the policies adversely affecting the interest of the Government in such insurance shall not be effective for such period as may be prescribed by the laws of the State in which this contract is to be performed and in no event less than **thirty (30)** days after written notice thereof to the Contracting Officer."

1.3 CONTRACTOR PERSONNEL REQUIREMENTS

1.3.1 Subcontractors and Personnel

Furnish a list of contact personnel of the Contractor and subcontractors including addresses and telephone numbers for use in the event of an emergency. As changes occur and additional information becomes available, correct and change the information contained in previous lists.

### 1.3.2 Identification Badges

Identification badges will be furnished without charge. Application for and use of badges will be as directed. Immediately report instances of lost or stolen badges to the Contracting Officer.

Commercial and contract employees will be issued a contractor's badge good for one year. Commercial and contract employees are required to resubmit a complete 50 state criminal records check in order to renew their contractor's badge.

If an employee is terminated prior to end of the contract, the contractor shall return the base identification card to the Contracting Officer. This requirement also applies to all sub-contract employees.

In no event will a contractor employee be permitted access to the US Marine Corps Air Station for the purpose of on-site performance without the documentation.

### 1.3.3 Subcontractor Special Requirements

#### 1.3.3.1 Asbestos Containing Material

All contract requirements assigned to the Private Qualified Person (PQP) shall be accomplished directly by a first tier subcontractor.

### 1.3.4 Contractor Personnel Requirements

Follow Security requirements addressed in 01 14 00 WORK RESTRICTIONS.

## 1.4 SUPERVISION

Have at least one qualified supervisor capable of reading, writing, and conversing fluently in the English language on the job site during working hours. In addition, if a Quality Control (QC) representative is required on the contract, then that individual shall also have fluent English communication skills.

## 1.5 PRECONSTRUCTION CONFERENCE

After award of the contract but prior to commencement of any work at the site, meet with the Contracting Officer to discuss and develop a mutual understanding relative to the administration of the value engineering and safety program, preparation of the schedule prices, shop drawings, and other submittals, scheduling programming, and prosecution of the work. Major subcontractors who will engage in the work shall also attend.

## 1.6 LEVEL "C" PARTNERING

To most effectively accomplish the contract, the Government requires the formation of a cohesive partnership with the contractor and its subcontractors. The partnering relationship is based upon trust, dedication to common goals, an understanding of each other's expectations and values, and a commitment to success. The goals of the partnering process are improved communication, efficiency and cost effectiveness, increased opportunity for innovation, and the continuous improvement of product quality. The partnership will strive to draw in the strength of each organization in an effort to achieve a quality project done right the

first time, within budget, on schedule, and without any safety mishaps, thereby providing the opportunity for the contractor to make a reasonable profit. This level of partnering is an introduction to partnering concepts and benefits and should become a part of the preconstruction conference. The senior ROICC and contract persons present will jointly host the initial session. The partners will determine the frequency of the follow-on sessions. Partnering sessions should be held at or near the location of the ROICC office.

#### 1.7 ELECTRONIC MAIL (E-MAIL) ADDRESS

The Contractor shall establish and maintain electronic mail (e-mail) capability along with the capability to open various electronic attachments in Microsoft, Adobe Acrobat, and other similar formats. Within 10 days after contractor award, the Contractor shall provide the Contracting Officer a single (only one) e-mail address for electronic communications from the Contracting Officer related to this contract including, but not limited to contract documents, invoice information, request for proposals, and other correspondence. The Contracting Officer may also use e-mail to notify the Contractor of base access conditions when emergency conditions warrant, such as hurricanes, terrorist threats, etc. Multiple e-mail addresses will not be allowed.

It is the Contractor's responsibility to make timely distribution of all Contracting Officer initiated e-mail with its own organization including the field office(s). The Contractor shall promptly notify the Contracting Officer, in writing, of any changes to this e-mail address.

#### PART 2 PRODUCTS

Not used.

#### PART 3 EXECUTION

Not used.

-- End of Section --

## SECTION 01 35 29

## SAFETY AND OCCUPATIONAL HEALTH REQUIREMENTS

04/06

## PART 1 GENERAL

## 1.1 REFERENCES

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

## AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI A10.32	Personal Fall Protection - Safety Requirements for Construction and Demolition Operations
ANSI Z359.1	(1992; R 1999) Safety Requirements for Personal Fall Arrest Systems, Subsystems and Components
ANSI/ASSE A10.34	(2001) Protection of the Public on or Adjacent to Construction Sites

## NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 10	(2002) Portable Fire Extinguishers
NFPA 51B	(2003) Fire Prevention During Welding, Cutting, and Other Hot Work
NFPA 70	(2005) National Electrical Code
NFPA 70E	(2004) Electrical Safety in the Workplace

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

EM 385-1-1	(2003) Safety -- Safety and Health Requirements
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## U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

29 CFR 1910.146	Permit-required Confined Spaces
29 CFR 1926	Safety and Health Regulations for Construction
29 CFR 1926.500	Fall Protection

## 1.2 DEFINITIONS

b. High Visibility Accident. Any mishap which may generate publicity and/or high visibility.

c. Medical Treatment. Treatment administered by a physician or by registered professional personnel under the standing orders of a

physician. Medical treatment does not include first aid treatment even through provided by a physician or registered personnel.

f. Recordable Injuries or Illnesses. Any work-related injury or illness that results in:

- (1) Death, regardless of the time between the injury and death, or the length of the illness;
- (2) Days away from work (any time lost after day of injury/illness onset);
- (3) Restricted work;
- (4) Transfer to another job;
- (5) Medical treatment beyond first aid;
- (6) Loss of consciousness; or
- (7) A significant injury or illness diagnosed by a physician or other licensed health care professional, even if it did not result in (1) through (6) above.

g. "USACE" property and equipment specified in USACE EM 385-1-1 should be interpreted as Government property and equipment.

h. Weight Handling Equipment (WHE) Accident. A WHE accident occurs when any one or more of the six elements in the operating envelope fails to perform correctly during operation, including operation during maintenance or testing resulting in personnel injury or death; material or equipment damage; dropped load; derailment; two-blocking; overload; and/or collision, including unplanned contact between the load, crane, and/or other objects. A dropped load, derailment, two-blocking, overload and collision are considered accidents even though no material damage or injury occurs. A component failure (e.g., motor burnout, gear tooth failure, bearing failure) is not considered an accident solely due to material or equipment damage unless the component failure results in damage to other components (e.g., dropped boom, dropped load, roll over, etc.).

### 1.3 REGULATORY REQUIREMENTS

In addition to the detailed requirements included in the provisions of this contract, work performed shall comply with USACE EM 385-1-1, and the following federal, state, and local, laws, ordinances, criteria, rules and regulations. Submit matters of interpretation of standards to the appropriate administrative agency for resolution before starting work. Where the requirements of this specification, applicable laws, criteria, ordinances, regulations, and referenced documents vary, the most stringent requirements shall apply.

### 1.4 SITE QUALIFICATIONS, DUTIES AND MEETINGS

#### 1.4.1 Personnel Qualifications

##### 1.4.1.1 Site Safety and Health Officer (SSHO)

Site Safety and Health Officer (SSHO) shall be provided at the work site at

all times to perform safety and occupational health management, surveillance, inspections, and safety enforcement for the Contractor. The Contractor Quality Control (QC) person can be the SSHO on this project. The SSHO shall meet the following requirements:

Level 2:

- A minimum of 3 years safety work on similar project.
- 30-hour OSHA construction safety class or equivalent within last 3 years.
- Competent person training as needed.

1.4.2 Personnel Duties

1.4.2.1 Site Safety and Health Officer (SSHO)/Superintendent

- a. Conduct daily safety and health inspections and maintain a written log which includes area/operation inspected, date of inspection, identified hazards, recommended corrective actions, estimated and actual dates of corrections. Safety inspection logs shall be attached to the Contractors' daily production/quality control report.
- b. Conduct mishap investigations and complete required reports. Maintain the OSHA Form 300 and Daily Production reports for prime and sub-contractors.
- c. Maintain applicable safety reference material on the job site.
- d. Attend the pre-construction conference, pre-work meetings including preparatory inspection meeting, and periodic in-progress meetings.
- e. Implement and enforce accepted APPS and AHAs.
- f. Maintain a safety and health deficiency tracking system that monitors outstanding deficiencies until resolution. A list of unresolved safety and health deficiencies shall be posted on the safety bulletin board.
- g. Ensure sub-contractor compliance with safety and health requirements.

Failure to perform the above duties will result in dismissal of the superintendent and/or SSHO, and a project work stoppage. The project work stoppage will remain in effect pending approval of a suitable replacement.

1.4.3 Meetings

1.4.3.1 Preconstruction Conference

- a. Contractor representatives who have a responsibility or significant role in accident prevention on the project shall attend the preconstruction conference. This includes the project superintendent, site safety and health officer, quality control supervisor, or any other assigned safety and health professionals who participated in the development of the APP (including the Activity Hazard Analyses (AHAs) and special plans, program and procedures associated with it).
- b. The Contractor shall discuss the details of the submitted APP to include incorporated plans, programs, procedures and a listing of anticipated AHAs that will be developed and implemented during the

performance of the contract. This list of proposed AHAs will be reviewed at the conference and an agreement will be reached between the Contractor and the Contracting Officer's representative as to which phases will require an analysis. In addition, a schedule for the preparation, submittal, review, and acceptance of AHAs shall be established to preclude project delays.

c. Deficiencies in the submitted APP will be brought to the attention of the Contractor at the preconstruction conference, and the Contractor shall revise the plan to correct deficiencies and re-submit it for acceptance. Work shall not begin until there is an accepted APP.

d. The functions of a Preconstruction conference may take place at the Post-Award Kickoff meeting for Design Build Contracts.

#### 1.5 ACCIDENT PREVENTION PLAN (APP)

The Contractor shall use a qualified person to prepare the written site-specific APP. Prepare the APP in accordance with the format and requirements of USACE EM 385-1-1 and as supplemented herein. Cover all paragraph and subparagraph elements in USACE EM 385-1-1, Appendix A, "Minimum Basic Outline for Accident Prevention Plan". Specific requirements for some of the APP elements are described below. The APP shall be job-specific and shall address any unusual or unique aspects of the project or activity for which it is written. The APP shall interface with the Contractor's overall safety and health program. Any portions of the Contractor's overall safety and health program referenced in the APP shall be included in the applicable APP element and made site-specific. The Government considers the Prime Contractor to be the "controlling authority" for all work site safety and health of the subcontractors. Contractors are responsible for informing their subcontractors of the safety provisions under the terms of the contract and the penalties for noncompliance, coordinating the work to prevent one craft from interfering with or creating hazardous working conditions for other crafts, and inspecting subcontractor operations to ensure that accident prevention responsibilities are being carried out. The APP shall be signed by the person and firm (senior person) preparing the APP, the Contractor, the on-site superintendent, the designated site safety and health officer and any designated CSP and/or CIH.

Submit the APP to the Contracting Officer 15 calendar days prior to the date of the preconstruction conference for acceptance. Work cannot proceed without an accepted APP.

Once accepted by the Contracting Officer, the APP and attachments will be enforced as part of the contract. Disregarding the provisions of this contract or the accepted APP will be cause for stopping of work, at the discretion of the Contracting Officer, until the matter has been rectified.

Once work begins, changes to the accepted APP shall be made with the knowledge and concurrence of the Contracting Officer, project superintendent, SSO and quality control manager. Should any hazard become evident, stop work in the area, secure the area, and develop a plan to remove the hazard. Notify the Contracting Officer within 24 hours of discovery. Eliminate/remove the hazard. In the interim, all necessary action shall be taken to restore and maintain safe working conditions in order to safeguard onsite personnel, visitors, the public (as defined by ANSI/ASSE A10.34,) and the environment.

Copies of the accepted plan will be maintained at the Contracting Officer's office and at the job site. The APP shall be continuously reviewed and amended, as necessary, throughout the life of the contract. Unusual or high-hazard activities not identified in the original APP shall be incorporated in the plan as they are discovered.

#### 1.6 ACTIVITY HAZARD ANALYSIS (AHA)

The Activity Hazard Analysis (AHA) format shall be in accordance with USACE EM 385-1-1. Submit the AHA for review at least 15 calendar days prior to the start of each phase. Format subsequent AHAs as amendments to the APP. The analysis should be used during daily inspections to ensure the implementation and effectiveness of the activity's safety and health controls.

The AHA list will be reviewed periodically (at least monthly) at the Contractor supervisory safety meeting and updated as necessary when procedures, scheduling, or hazards change.

The activity hazard analyses shall be developed using the project schedule as the basis for the activities performed. Any activities listed on the project schedule will require an AHA. The AHAs will be developed by the contractor, supplier or subcontractor and provided to the prime contractor for submittal to the Contracting Officer.

#### 1.7 DISPLAY OF SAFETY INFORMATION

Within 1 calendar days after commencement of work, erect a safety bulletin board at the job site. The safety bulletin board shall include information and be maintained as required by EM 385-1-1, section 01.A.06. Additional items required to be posted include:

#### 1.8 SITE SAFETY REFERENCE MATERIALS

Maintain safety-related references applicable to the project, including those listed in the article "References." Maintain applicable equipment manufacturer's manuals.

#### 1.9 EMERGENCY MEDICAL TREATMENT

Contractors will arrange for their own emergency medical treatment. Government has no responsibility to provide emergency medical treatment.

#### 1.10 REPORTS

##### 1.10.1 Accident Reports

a. For recordable injuries and illnesses, and property damage accidents resulting in at least \$2,000 in damages, the Prime Contractor shall conduct an accident investigation to establish the root cause(s) of the accident, complete the and provide the report to the Contracting Officer within 5 calendar day(s) of the accident. The Contracting Officer will provide copies of any required or special forms.

b. For any weight handling equipment accident (including rigging gear accidents) the Prime Contractor shall conduct an accident investigation to establish the root cause(s) of the accident, complete the WHE Accident Report (Crane and Rigging Gear) form and provide the report to

the Contracting Officer within 30 calendar days of the accident. Crane operations shall not proceed until cause is determined and corrective actions have been implemented to the satisfaction of the contracting officer. The Contracting Officer will provide a blank copy of the accident report form.

#### 1.10.2 Accident Notification

Notify the Contracting Officer as soon as practical, but not later than four hours, after any accident meeting the definition of Recordable Injuries or Illnesses or High Visibility Accidents, property damage equal to or greater than \$2,000, or any weight handling equipment accident. Information shall include contractor name; contract title; type of contract; name of activity, installation or location where accident occurred; date and time of accident; names of personnel injured; extent of property damage, if any; extent of injury, if known, and brief description of accident (to include type of construction equipment used, PPE used, etc.). Preserve the conditions and evidence on the accident site until the Government investigation team arrives on-site and Government investigation is conducted.

#### 1.10.3 Monthly Exposure Reports

Monthly exposure reporting to the Contracting Officer is required to be attached to the monthly billing request. This report is a compilation of employee-hours worked each month for all site workers, both prime and subcontractor. The Contracting Officer will provide copies of any special forms.

#### 1.11 HOT WORK

Prior to performing "Hot Work" (welding, cutting, etc.) or operating other flame-producing/spark producing devices, a written permit shall be requested from the Fire Division. CONTRACTORS ARE REQUIRED TO MEET ALL CRITERIA BEFORE A PERMIT IS ISSUED. The Contractor will provide at least two (2) twenty (20) pound 4A:20 BC rated extinguishers for normal "Hot Work". All extinguishers shall be current inspection tagged, approved safety pin and tamper resistant seal. It is also mandatory to have a designated FIRE WATCH for any "Hot Work" done at this activity. The Fire Watch shall be trained in accordance with NFPA 51B and remain on-site for a minimum of 30 minutes after completion of the task or as specified on the hot work permit.

When starting work in the facility, Contractors shall require their personnel to familiarize themselves with the location of the nearest fire alarm boxes and place in memory the emergency Fire Division phone number. ANY FIRE, NO MATTER HOW SMALL, SHALL BE REPORTED TO THE RESPONSIBLE FIRE DIVISION IMMEDIATELY.

#### PART 2 PRODUCTS

#### PART 3 EXECUTION

##### 3.1 CONSTRUCTION AND/OR OTHER WORK

###### 3.1.1 Hazardous Material Exclusions

Notwithstanding any other hazardous material used in this contract, radioactive materials or instruments capable of producing

ionizing/non-ionizing radiation (with the exception of radioactive material and devices used in accordance with USACE EM 385-1-1 such as nuclear density meters for compaction testing and laboratory equipment with radioactive sources) as well as materials which contain asbestos, mercury or polychlorinated biphenyls, di-isocyanates, lead-based paint are prohibited. The Contracting Officer, upon written request by the Contractor, may consider exceptions to the use of any of the above excluded materials.

### 3.1.2 Unforeseen Hazardous Material

The design should have identified materials such as PCB, lead paint, and friable and non-friable asbestos. If material, not indicated, that may be hazardous to human health upon disturbance during construction operations is encountered, stop that portion of work and notify the Contracting Officer immediately. Within 14 calendar days the Government will determine if the material is hazardous. If material is not hazardous or poses no danger, the Government will direct the Contractor to proceed without change. If material is hazardous and handling of the material is necessary to accomplish the work, the Government will issue a modification pursuant to "FAR 52.243-4, Changes" and "FAR 52.236-2, Differing Site Conditions."

### 3.2 PRE-OUTAGE COORDINATION MEETING

Contractors are required to apply for utility outages at least 15 days in advance. As a minimum, the request should include the location of the outage, utilities being affected, duration of outage and any necessary sketches. Special requirements for electrical outage requests are contained elsewhere in this specification section. Once approved, and prior to beginning work on the utility system requiring shut down, the Contractor shall attend a pre-outage coordination meeting with the Contracting Officer to review the scope of work and the lock-out/tag-out procedures for worker protection. No work will be performed on energized electrical circuits unless proof is provided that no other means exist.

### 3.3 FALL HAZARD PROTECTION AND PREVENTION PROGRAM

The Contractor shall establish a fall protection and prevention program, for the protection of all employees exposed to fall hazards. The program shall include company policy, identify responsibilities, education and training requirements, fall hazard identification, prevention and control measures, inspection, storage, care and maintenance of fall protection equipment and rescue and evacuation procedures.

#### 3.3.1 Training

The Contractor shall institute a fall protection training program. As part of the Fall Hazard Protection and Prevention Program, the Contractor shall provide training for each employee who might be exposed to fall hazards. A competent person for fall protection shall provide the training. Training requirements shall be in accordance with USACE EM 385-1-1, section 21.A.16.

#### 3.3.2 Fall Protection Equipment and Systems

The Contractor shall enforce use of the fall protection equipment and systems designated for each specific work activity in the Fall Protection and Prevention Plan and/or AHA at all times when an employee is exposed to a fall hazard. Employees shall be protected from fall hazards as specified in EM 385-1-1, section 21. In addition to the required fall protection

systems, safety skiff, personal floatation devices, life rings etc., are required when working above or next to water in accordance with USACE EM 385-1-1, paragraphs 05.H. and 05.I. Personal fall arrest systems are required when working from an articulating or extendible boom, swing stages, or suspended platform. In addition, personal fall arrest systems are required when operating other equipment such as scissor lifts if the work platform is capable of being positioned outside the wheelbase. The need for tying-off in such equipment is to prevent ejection of the employee from the equipment during raising, lowering, or travel. Fall protection must comply with 29 CFR 1926.500, Subpart M, USACE EM 385-1-1 and ANSI A10.32.

#### 3.3.2.1 Personal Fall Arrest Equipment

Personal fall arrest equipment, systems, subsystems, and components shall meet ANSI Z359.1. Only a full-body harness with a shock-absorbing lanyard or self-retracting lanyard is an acceptable personal fall arrest body support device. Body belts may only be used as a positioning device system (for uses such as steel reinforcing assembly and in addition to an approved fall arrest system). Harnesses shall have a fall arrest attachment affixed to the body support (usually a Dorsal D-ring) and specifically designated for attachment to the rest of the system. Only locking snap hooks and carabiners shall be used. Webbing, straps, and ropes shall be made of synthetic fiber. The maximum free fall distance when using fall arrest equipment shall not exceed 1.8 m (6 feet). The total fall distance and any swinging of the worker (pendulum-like motion) that can occur during a fall shall always be taken into consideration when attaching a person to a fall arrest system.

#### 3.3.3 Fall Protection for Roofing Work

Fall protection controls shall be implemented based on the type of roof being constructed and work being performed. The roof area to be accessed shall be evaluated for its structural integrity including weight-bearing capabilities for the projected loading.

##### a. Low Sloped Roofs:

(1) For work within 1.8 m (6 feet) of an edge, on low-slope roofs, personnel shall be protected from falling by use of personal fall arrest systems, guardrails, or safety nets.

(2) For work greater than 1.8 m (6 feet) from an edge, warning lines shall be erected and installed in accordance with 29 CFR 1926.500 and USACE EM 385-1-1.

b. Steep-Sloped Roofs: Work on steep-sloped roofs requires a personal fall arrest system, guardrails with toe-boards, or safety nets. This requirement also includes residential or housing type construction.

#### 3.3.4 Existing Anchorage

Existing anchorages, to be used for attachment of personal fall arrest equipment, shall be certified (or re-certified) by a qualified person for fall protection in accordance with ANSI Z359.1. Existing horizontal lifeline anchorages shall be certified (or re-certified) by a registered professional engineer with experience in designing horizontal lifeline systems.

### 3.3.5 Horizontal Lifelines

Horizontal lifelines shall be designed, installed, certified and used under the supervision of a qualified person for fall protection as part of a complete fall arrest system which maintains a safety factor of 2 (29 CFR 1926.500).

### 3.3.6 Guardrails and Safety Nets

Guardrails and safety nets shall be designed, installed and used in accordance with EM 385-1-1 and 29 CFR 1926 Subpart M.

### 3.3.7 Rescue and Evacuation Procedures

When personal fall arrest systems are used, the contractor must ensure that the mishap victim can self-rescue or can be rescued promptly should a fall occur. A Rescue and Evacuation Plan shall be prepared by the contractor and include a detailed discussion of the following: methods of rescue; methods of self-rescue; equipment used; training requirement; specialized training for the rescuers; procedures for requesting rescue and medical assistance; and transportation routes to a medical facility. The Rescue and Evacuation Plan shall be included in the Activity Hazard Analysis (AHA) for the phase of work, in the Fall Protection and Prevention (FP&P) Plan, and the Accident Prevention Plan (APP).

## 3.4 SCAFFOLDING

### 3.4.1 Stilts

The use of stilts for gaining additional height in construction, renovation, repair or maintenance work is prohibited.

## 3.5 EQUIPMENT

### 3.5.1 Material Handling Equipment

a. Material handling equipment such as forklifts shall not be modified with work platform attachments for supporting employees unless specifically delineated in the manufacturer's printed operating instructions.

b. The use of hooks on equipment for lifting of material must be in accordance with manufacturer's printed instructions.

c. Operators of forklifts or power industrial trucks shall be licensed in accordance with OSHA.

### 3.5.2 Weight Handling Equipment

a. The Contractor shall comply with the crane manufacturer's specifications and limitations for erection and operation of cranes and hoists used in support of the work. Erection shall be performed under the supervision of a designated person (as defined in ASME B30.5). All testing shall be performed in accordance with the manufacturer's recommended procedures.

b. Under no circumstance shall a Contractor make a lift at or above 90% of the cranes rated capacity in any configuration.

c. When operating in the vicinity of overhead transmission lines, operators and riggers shall be alert to this special hazard and shall follow the requirements of USACE EM 385-1-1 section 11 and ASME B30.5 or ASME B30.22 as applicable.

d. Portable fire extinguishers shall be inspected, maintained, and recharged as specified in NFPA 10, Standard for Portable Fire Extinguishers.

e. All employees shall be kept clear of loads about to be lifted and of suspended loads.

f. The Contractor shall use cribbing when performing lifts on outriggers.

### 3.6 EXCAVATIONS

The competent person shall perform soil classification in accordance with 29 CFR 1926.

#### 3.6.1 Utility Locations

Prior to digging, the appropriate digging permit must be obtained. All underground utilities in the work area must be positively identified by a private utility locating service in addition to any station locating service and coordinated with the station utility department. Any markings made during the utility investigation must be maintained throughout the contract.

#### 3.6.2 Utility Location Verification

The Contractor must physically verify underground utility locations by hand digging using wood or fiberglass handled tools when any adjacent construction work is expected to come within three feet of the underground system. Digging within 0.061 m (2 feet) of a known utility must not be performed by means of mechanical equipment; hand digging shall be used. If construction is parallel to an existing utility the utility shall be exposed by hand digging every 30.5 m (100 feet) if parallel within 1.5 m (5 feet) of the excavation.

#### 3.6.3 Shoring Systems

Trench and shoring systems must be identified in the accepted safety plan and AHA. Manufacture tabulated data and specifications or registered engineer tabulated data for shoring or benching systems shall be readily available on-site for review. Job-made shoring or shielding shall have the registered professional engineer stamp, specifications, and tabulated data. Extreme care must be used when excavating near direct burial electric underground cables.

#### 3.6.4 Trenching Machinery

Trenching machines with digging chain drives shall be operated only when the spotters/laborers are in plain view of the operator. Operator and spotters/laborers shall be provided training on the hazards of the digging chain drives with emphasis on the distance that needs to be maintained when the digging chain is operating. Documentation of the training shall be kept on file at the project site.

### 3.7 UTILITIES WITHIN CONCRETE SLABS

Utilities located within concrete slabs or pier structures, bridges, and the like, are extremely difficult to identify due to the reinforcing steel used in the construction of these structures. Whenever contract work involves concrete chipping, saw cutting, or core drilling, the existing utility location must be coordinated with station utility departments in addition to a private locating service. Outages to isolate utility systems shall be used in circumstances where utilities are unable to be positively identified. The use of historical drawings does not alleviate the contractor from meeting this requirement.

### 3.8 ELECTRICAL

#### 3.8.1 Conduct of Electrical Work

Underground electrical spaces must be certified safe for entry before entering to conduct work. Cables that will be cut must be positively identified and de-energized prior to performing each cut. Positive cable identification must be made prior to submitting any outage request for electrical systems. Arrangements are to be coordinated with the Contracting Officer and Station Utilities for identification. The Contracting Officer will not accept an outage request until the Contractor satisfactorily documents that the circuits have been clearly identified. Perform all high voltage cable cutting remotely using hydraulic cutting tool. When racking in or live switching of circuit breakers, no additional person other than the switch operator will be allowed in the space during the actual operation. Plan so that work near energized parts is minimized to the fullest extent possible. Use of electrical outages clear of any energized electrical sources is the preferred method. When working in energized substations, only qualified electrical workers shall be permitted to enter. When work requires Contractor to work near energized circuits as defined by the NFPA 70, high voltage personnel must use personal protective equipment that includes, as a minimum, electrical hard hat, safety shoes, insulating gloves with leather protective sleeves, fire retarding shirts, coveralls, face shields, and safety glasses. In addition, provide electrical arc flash protection for personnel as required by NFPA 70E. Insulating blankets, hearing protection, and switching suits may also be required, depending on the specific job and as delineated in the Contractor's AHA.

#### 3.8.2 Portable Extension Cords

Portable extension cords shall be sized in accordance with manufacturer ratings for the tool to be powered and protected from damage. All damaged extension cords shall be immediately removed from service. Portable extension cords shall meet the requirements of NFPA 70.

### 3.9 WORK IN CONFINED SPACES

The Contractor shall comply with the requirements in Section 06.I of USACE EM 385-1-1, OSHA 29 CFR 1910.146 and OSHA 29 CFR 1926.21(b)(6). Any potential for a hazard in the confined space requires a permit system to be used.

-- End of Section --

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SCOPE OF WORK

6/11

PART 1 GENERAL REQUIREMENTS: In order to implement Conservation Voltage Regulation (CVR) at Cherry Point, upgrades to the Energy Monitoring and Control System (EMCS) and Supervisory Control And Data Acquisition (SCADA) system are required to ensure service voltages stay within the ANSI C84.1 limits as the distribution voltages are regulated to lower values. These upgrades will allow critical system service voltages to be monitored. The upgrades include adding new electric meters to the EMCS. These new EMCS electric meters and selected existing EMCS electric meters will be integrated into the SCADA system by establishing BACnet/IP connections to these meters from the SCADA system. Some of these existing meters are located in the Fleet Readiness Center East (FRCE) and to access these meters a link between the FRCE EMCS and the MCAS's SCADA will be established. The SCADA "Wonderware" application will be modified to display, alarm, save to history and report on the data obtained from these meters. Upgrades to some obsolete SCADA and EMCS hardware and software are required to ensure continued reliable operation of these systems.

1.1 PREFERRED SOURCES: The FRCE and MCAS's EMCS systems are both Johnson Control Incorporated (JCI) Metasys systems. As such, JCI is the preferred source for all tasks involving connecting directly to, modifying or installation any Metasys components. JCI can be contacted at:

Johnson Controls, Inc.  
Controls Group  
395-B N. Green Meadows Drive  
Wilmington, NC 28405  
(910)794-4304  
Attn: Randy Reed (randall.d.reed@jci.com)

The SCADA application was developed for MCAS Cherry Point by Affinity Automation and they have been under contract to provide on-going service to support this system since it was installed. Affinity Automation can be contacted at:

Affinity Automation, LLC  
18635 Starcreek Drive, Suite C  
Cornelius, NC 28031  
(704)895-1234x112  
Attn: Todd Danner (tdanner@affinityautomation.com)

Both of these systems are complex industrial control systems which provide essential functions for operating and maintaining the electrical distribution, water distribution, wastewater processing and building energy systems at MCAS Cherry Point and contribute to the most efficient operation of these systems. These two preferred sources have unique knowledge of these systems which gives them superior qualifications to successfully

accomplish the requirements of this contract.

2. WORK INCLUDES: Providing all labor, supervision, tools, equipment, materials, and the transportation needed for the completion of the scope of work.

3. LOCATION: All work will be performed aboard the Marine Corps Air Station at Cherry Point, North Carolina. The work will be performed in various locations as described in this Scope of Work (SOW).

4. REQUIREMENTS: All work shall be performed as intended, denoted and outlined in the scope of work. The MCAS and FRCE EMCSs are both Johnson Control Incorporated (JCI) Metasys systems which operate on separate Ethernet Local Area Networks (LANs). The SCADA and MCAS EMCS share the same LAN hardware, but the SCADA application software is Wonderware's Active Factory.

4.1 NEW EMCS METERS: New Veris Industries H-8026 electric meters shall be installed in the following buildings as shown in Table 1. Refer to Figure 1 for building locations. These meters have JCI Metasys N2 network output and shall be connected to the N2 network cable connected to the JCI DX9100 already installed at each location. Care shall be taken to properly terminate the N2 bus at each location. Each meter is to be integrated in to the EMCS with data points matching the existing power meters connected to the EMCS. These electric meters are to be added to the Power Meter Summary Building EMCS displays.

#	BUILDING	VOLTAGE	AMPS	NAE	FEEDER
1	3143	480	400	NAE 0087-1	SCH
2	3899	208	150	NAE 0087-1	SCH
3	4259	480	1200	NAE 0087-1	Z

TABLE 1

4.1.1 BUILDING 3143: Install the meter in 400A, 480Y/277V panel MDP. Install RGS conduit from MDP and intercept LB penetrating the wall above the exterior mounted EMCS cabinet. Demo unused phone cable in this conduit and run new N2 cable from MDP to the to the N2 bus on the DX9100 in the EMCS cabinet.

4.1.2 LIFT STATION 3899: Install the meter in the ATS with the CTs around the load conductors. Utilize existing 1.5" PVC coated conduit from ATS to EMCS cabinet to install new N2 cable to DX9100 N2 bus.

4.1.3 BUILDING 4529: Install the meter in the existing 1200A, 480Y/277V panel MDP. Install RGS conduit from MDP to the "TIE IN" cabinet located in the same room with MDP. Install N2 cable from MDP through the "TIE IN" cabinet and through existing conduit to the EMCS cabinet located on the rear exterior of the building. Terminate the N2 cable on the DX9100's N2 bus.

4.2 ADDING EMCS METERS TO SCADA USING JCI BACnet: A new "TopServer 5.0 BACnet Communications Driver" shall be purchased and installed on the SCADA servers which provides the capability

for EMCS data to be accessed by the SCADA system. Table 2 identifies existing EMCS meters which along with those new meters identified in Table 1 are to be configured to have the SCADA acquire Average Voltage, KW and KWH from each meter. A new SCADA HMI page shall be added to display these meters' data. This page shall be accessed from the SCADA "Overview" page. Alarm and history capabilities shall be set up for these points.

#	BUILDING	NAE/NCE/NIE	FEEDER
1	1 #1	NAE 0001-2	FCB PV
2	1 #2	NAE 0001-2	FCB PV
3	87	NAE 0159-1	Z
4	194	NAE 0298-1	PV
5	152	NCE 0152-1	A3/A4
6	159 #1	NAE-0159-1	F19/F20
7	159 #2	NAE-0159-1	PV
8	199	NAE 4397-1	B11/B12
9	287	NAE 0298-1	E15/E16
10	487	NAE 0487-1	MOQ
11	1016 #1	NAE 1701-1	B5/B6
12	1016 #2	NAE 1701-1	PV
13	1281	NAE 4397-1	E15/E16
14	1666	NIE 0130-1	B11/B12
15	1701	NAE 1701-1	B5/B6
16	1702	NAE 3992-1	Z
17	3451	NAE 3451-1	A1/A2
18	3918	NIE 4397-2	Z
19	3919	NAE 3919-1	MOQL
20	4066	NAE 4066-1	A1/A2
21	4166	NIE 4197-1	Z
22	4356	NAE 3919-1	IND
23	4397	NAE 4397-1	A3/A4
24	3258	NAE 3919-1	MOQ
25	1009	NAE 3919-1	MOQ

TABLE 2

4.2.1 SOFTWARE PROGRAMMING: Install TopServer 5.0 BACnet communications driver on SCADA\_1 and SCADA\_2. Program SCADA application software to incorporate new meters with data points, history tags, alarming values, and HMI pages to include -

Configuration of identified meters for Average Volts, KW and KWH.

Meter data validation with MCAS personnel.

4.2.2 BRIDGE TO FRCE EMCS: Figure 2, Note 1, illustrates a new connection from the EMCS ADN-4 layer 3 switch in Building 159 to the FRCE NAE in that building which will allow the FRCE existing electric meters identified in Table 3 to be read by the SCADA system. All hardware as shown on Figure 1 shall be installed and the switch and SCADA system shall be programmed to read these meters. Configure meters as described in paragraph 4.2.1 The connection at ADN-4 is through a layer 3 switch and firewall rules for that port in that switch shall be implemented to limit traffic to satisfy network security requirements.

#	BUILDING	TRANSFORMER	FEEDER
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1	133	MA	D13/D14
2	133	MD	D17/D18
3	133	ME	D9/D10
4	4032	DDA	F19/F20
5	4188	NA	D9/D10
6	4224	VA	F19/F20
7	4225	WA	F19/F20
8	4470	JJA	A1/A2

TABLE 3

4.3 UPGRADE SCADA HARDWARE AND SOFTWARE: All software and hardware modifications as indicated in this section shall be provided. The servers and software shall be configured in full to perform the same functionality as the existing system. Software upgrades to the latest SCADA software shall be included for the three view nodes but view node hardware will not be replaced. Refer to Figure 2, Note 2, for the network configuration of the SCADA servers.

4.3.1 SERVER REPLACEMENT: The existing SCADA\_1, SCADA\_2, SQL\_1 and SQL\_2 servers are DELL Power Edge 2800 servers and are located in the UMAC EMCS room in Building 87. Each of these four servers are to be replaced with Dell PowerEdge T310 Server to include -

Windows Server 2008 R2 Standard  
 Intel Xeon X3450, 2.66 GHz 8M Cache Processor  
 4GB Memory 1333 MHz RDIMM  
 Four (4) 250 GB 7.2K RPM SATA Hard Drives  
 RAID 5 Support with Hot Plug Capabilities  
 Intel Gigabit Ethernet NIC, Quad Port  
 DVD-RW, SATA Internal  
 Redundant Power Supplies  
 3 YR Dell ProSupport 4HR Onsite Response, 7x24

4.3.2 WONDERWARE SOFTWARE UPGRADE: The servers' and view nodes' Wonderware software shall be upgraded to the indicated versions. Wonderware SCADA Software Upgrades to include -

Application Server 25000 IO, V3.1 (Qty 2)  
 Application Server Platform, V3.1 (Qty 6)  
 Historian 5000 Tag, V10.0 (Qty 2)  
 Intouch for System Platform, V10.0 (Qty 3)  
 FS Development Unlimited, V10.0 (Qty 2)

4.3.3 INSTALLATION AND SOFTWARE CONFIGURATION: This shall include -

Backup of current SCADA Configuration  
 Application of all Windows Updates  
 Installation of SCADA Software  
 Installation of MCAS SCADA Configuration  
 Installation of Software Licensing  
 Bench test of software operation and configuration

4.3.4 ONSITE INSTALLATION AND TESTING: This shall include -

Installation of new servers.  
 Upgrade SCADA software on view nodes.

Comprehensive testing of communications to field equipment.  
Data validation with field equipment via comparison of values at the end user interface and substation metering.  
Spot check circuit breaker controls operation.  
Automate backup routine of data and configuration to existing backup hard drives.

4.4 UPGRADE EMCS HARDWARE: Obsolete Network Integration Engines (NIEs) and Network Control Modules (NCMs) shall be replaced. These items shall be grouped into two separate additive bid line items. This task shall include demolishing the indicated NIEs and NCMs and installing new NAEs or NCEs to replace the NCMs in a one-for-one replacement. Each NAE/NCE is to be sized for the N2 devices and total object count associated with each existing NCM and programming requirements of the NCM/NIE it is replacing. All NCMs identified for one-for-one replacement have N2 device counts less than 32 which should allow them to be replaced with NCEs. All network N1 and N2 connections and power connections shall be made for each new NAE/NCE. Each new NAE/NCE shall be programmed by transferring the existing NCM's program to the new NAE/NCE and making all required changes to the NAE/NCE programming to result in a fully functional system. ADX software shall be changed as required to show the new NAEs/NCEs on existing workstation pages. Proper operation of the ITRON server with the new NAEs/NCEs shall be verified.

4.4.1 ADN-1: The two NIEs and six NCMs as identified on Figure 3 for this ADN shall be replaced as part of this requirement. A total of 6 NAEs/NCEs for this option are required.

4.4.2 ADN-3: The four NIEs and thirteen NCMs as identified on Figure 4 for this ADN shall be replaced as part of this requirement.

#### 5. TERMS OF THE CONTRACT:

a. The contractor is responsible for an on-site visit to inspect the work area and fully understand the scope of work.

b. All work shall be performed during the hours of 0730-1600, Monday through Friday. Any work performed outside of these periods must be pre-approved by the Contracting Officer. Project shall be completed within 120 days following contract award.

6. JOB EXECUTION: The contractor shall perform all work and incorporate the intent of this project as outlined in this scope of work. The demolition practice and installation shall conform to all industry standards and applications, i.e. North Carolina Building Codes and Statutes, National Electric Code, National Electric Safety Code and other OSHA Safety Standards as they apply to this project. All equipment and debris generated from this project becomes the property of the contractor and it must be removed from the jobsite and MCAS Cherry Point.

-- End of Section --