

STATEMENT OF WORK
USDA/ARS/NCAH
1920 Dayton Ave. Ames, Iowa 50010
Generator Maintenance Contract for 2022-2027

1.0 SCOPE OF WORK

The USDA requires a maintenance contract to provide Original Equipment Manufacturer (OEM) authorized service and maintenance for generators, automatic transfer switches and related equipment located at the USDA Laboratory facility located in Ames, Iowa.

2.0 BACKGROUND

The USDA requires a maintenance contract to provide OEM authorized service and maintenance for generators, automatic transfer switches, and related equipment located at the facility in Ames, IA. Proper maintenance utilizing parts is critical in ensuring operational and system integrity. Only OEM Caterpillar parts from the Caterpillar distribution system may be used on the Caterpillar Generators. The contractor needs to have 10 years' experience servicing Caterpillar generators and operating generators via an ISO control system. Awarded contractor shall provide documentation showing experience. All work shall be scheduled 2 weeks in advance with management personnel located at the site utility plant. All work shall be completed in the 12-month period of coverage as detailed below.

Contractors shall supply a Quote on their letterhead. Quoted price **MUST INCLUDE** complete breakout of all Materials, Labor (including labor rates), Equipment, Freight or Shipping, as well as any applicable Duties, Brokerage, or Custom's fees. It is anticipated that a fixed Price Contract will be awarded. Award will be made for a 1-year base period with four optional 1-year annual renewal periods. The decision not to renew will be at the sole discretion of the USDA.

Contractor shall be able to respond emergency calls regarding warranty claims for the service work and arrive on-site to an emergency service call within 2 hours (weather and technician availability dependent).

PERIOD OF COVERAGE

Base Year – 12 months

Option Year 1 – 12 months following Base Year

Option Year 2 – 12 months following Option Year 1

Option Year 3 – 12 months following Option Year 2

Option Year 4 – 12 months following Option Year 3

Maintenance shall be performed on the following equipment:

NCAH Equipment List						
Equipment Location	ID	Quantity	Type	Nominal Capacity	Model Number or Model	Serial Number
Bldg. 153	DG-1	1	Caterpillar Diesel Electric Generator	2,000 kW	3516 PKGG	OFDN01781
Bldg. 153	DG-2	1	Caterpillar Diesel Electric Generator	2,000 kW	3516 PGAL	OZAP00574
Bldg. 153	DG-4	1	Caterpillar Diesel Electric Generator	2,000 kW	3516 PKGG	OFDN01780
Bldg. 153	DG-5	1	Caterpillar Diesel Electric Generator	2,000 kW	3516 PGAL	OZAP000576
Bldg. 153	DG-6	1	Caterpillar Diesel Electric Generator	2,000 kW	3516 PGAL	OSBJ01201
Bldg. 22	B22 DG	1	Caterpillar Diesel Electric Generator	800 kW	3412 PKGG	09EP02880
Bldg. 401	B401 DG	1	Cummins Diesel Electric Generator	500 kW	DFEK569252	K040710038
Bldg. 402	B402 DG	1	Cummins Diesel Electric Generator	200 kW	6CTA-8.3G	46549234
Bldg. 417	B417 DG	1	Cummins Diesel Electric Generator	100 kW	5CEXL0359AAF	46562837
Bldg. 154	B154 ATS #1	1	Caterpillar ATS	480v	CTSCT	0TSE01025
Bldg. 154	B154 ATS #2	1	Caterpillar ATS	480v	CTSCT	0TSE01056
Bldg. 153	B153 ATS #3	1	Caterpillar ATS	480v	CTSCT	0TSE01055
Bldg. 153	B153 ATS #4	1	Caterpillar ATS	480v	CTSCT	0TSE01026
Bldg. 21	B21 ATS #1	1	ASCO ATS	480v	ASCO 7000	238630FP
Bldg. 22	B22 ATS #2	1	ASCO ATS	480v	ASCO 7000	238629FP
Bldg. 401	B401 ATS	1	Cummins	208v	OTPCF-5692526	K040710143
Bldg. 402	B402 ATS	1	Cummins	480v	OTPC-5743004	J050841110
Bldg. 417	B417 ATS	1	Cummins	208v	OTPC-5746017	L050865964

Planned Maintenance Level Requirements					
Equipment	Base Year	Renewal Year 1	Renewal Year 2	Renewal Year 3	Renewal Year 4
DG-1	1,2,4,5,31	1,2,3,4,5,6,9,31	1,2,4,5,31	1,2,4,5,31	1,2,3,4,5,6,9,31
DG-2	1,2,4,5,31	1,2,3,4,5,6,9,31	1,2,4,5,31	1,2,4,5,31	1,2,3,4,5,6,9,31
DG-4	1,2,4,5,31	1,2,3,4,5,6,9,31	1,2,4,5,31	1,2,4,5,31	1,2,3,4,5,6,9,31
DG-5	1,2,4,5,31	1,2,3,4,5,6,9,31	1,2,4,5,31	1,2,4,5,31	1,2,3,4,5,6,9,31
DG-6	1,2,4,5,31	1,2,3,4,5,6,9,31	1,2,4,5,31	1,2,4,5,31	1,2,3,4,5,6,9,31
B22 DG	1,2,4,5,31	1,2,3,4,5,6,9,31	1,2,4,5,31	1,2,4,5,31	1,2,3,4,5,6,9,31
B401 DG	1,2,4,5,31	1,2,3,4,5,6,9,31	1,2,4,5,31	1,2,4,5,31	1,2,3,4,5,6,9,31
B402 DG	1,2,4,5,31	1,2,3,4,5,6,9,31	1,2,4,5,31	1,2,4,5,31	1,2,3,4,5,6,9,31
B417 DG	1,2,4,5,31	1,2,3,4,5,6,9,31	1,2,4,5,31	1,2,4,5,31	1,2,3,4,5,6,9,31
B154 ATS #1		11		11	
B154 ATS #2		11		11	
B153 ATS #3		11		11	
B153 ATS #4		11		11	
B21 ATS #1		11		11	
B22 ATS #2		11		11	
B401 ATS		11		11	
B402 ATS		11		11	
B417 ATS		11		11	

3.0 CONTRACTOR REQUIREMENTS

The following OEM authorized service work shall be performed by OEM trained technicians on each of the (9) generators listed above as recommended.

Level 1: Comprehensive 64-Point Inspection

Inspect and test engine, generator, transfer switches, radiator, day tank, battery charger, engine block heater, gauges, and meters. Check emergency engine safety shutdown systems. Test oil and coolant quality and verify that they meet the manufacturer's specifications. Provide a written analysis of the inspection and identify any possible areas that need service within ten working days of completion of the work. Provide a price list of recommended replacement parts and labor cost for installation of the same within ten working days of the written report. A level 1 inspection shall be completed every 12 months for each generator each spring.

COOLING SYSTEM

1.1 Radiator/Heat Exchanger/Cooling System- Visual inspection for leaks and damage.

1.2 Fan Drive Pulley - Inspect for loose or worn pulleys and lubricate the fan drive as needed.

- 1.3 Fan Guard - Inspect for missing or broken parts.
- 1.4 Fan Belts - Inspect for frayed or worn belts. Verify tension and adjust as needed.
- 1.5 Coolant - Take Coolant Sample, indicate type of coolant (DEAC, ELC or Conventional) on coolant sample tag.
- 1.6 Hoses - Inspect of all hoses for condition. Verify connections.
- 1.7 Filler Cap - Inspect filler cap gaskets and sealing surfaces.
- 1.8 Inspect Jacket Water Heater - Inspect for proper operation and thermostat settings. Record water jacket temperature.
- 1.9 Water Pump - Visual inspection for leaks

LUBRICATION SYSTEM

- 2.1 Oil Level - Inspect for proper level inspect for leaks. Record level.
- 2.2 Oil Heater/Prelube Pump - Inspect for proper operation.
- 2.3 Crankcase Breather System - Inspect hose and connections. Note excessive blowby. Inspect for proper operation.

AIR SYSTEM

- 3.1 Air Filter - Inspect filter element and seals.
- 3.2 Air Inlet System - Inspect piping for damage or loose connections.

FUEL SYSTEM/GOVERNOR

- 4.1 Fuel Tank - Inspect for leaks and level. Record level.
- 4.2 Day Tank Pump - Verify proper operation. Inspect panel alarm lights.
- 4.3 Fuel Priming Pump - Verify proper operation.
- 4.4 Fuel Filters - Primary/Secondary. inspect for damage or leaks.
- 4.5 Water/Trap Separator - Drain water from tank or separator.
- 4.6 Fuel Lines - Inspect fuel line for leaks and tight connections. Inspect line brackets.

EXHAUST SYSTEM

- 5.1 Silencer and Piping - Inspect for damage or leakage. Inspect straps and rain cap.
- 5.2 Exhaust Manifold/Turbo - Inspect for damage, missing parts, or oil slobbering.

GENERATOR

- 6.1 Coupling and Guards - Inspect for vibration and loose or missing parts.
- 6.2 Wiring - Inspect for loose connections.
- 6.3 Rotating Rectifier - Inspect rotating rectifier wiring for loose connections.
- 6.4 Stator and Rotor - Inspect for damage and overall condition.
- 6.5 Inspect generator bearing.
- 6.6 Generator Barrel Heater- Inspect generator barrel heater for proper operation.

STARTING SYSTEM

- 7.1 Starting Motor - Inspect connections and wiring.
- 7.2 Battery Charger - Measure and record battery charger float voltage.
- 7.3 Battery Charger & Cables - Visually check for proper operation and loose terminals. Clean, lube and tighten all battery cable connections if needed.

7.4 Batteries – Check and record electrolyte level.

7.4.1 Record Specific Gravity readings.

CONTROL PANEL/CABINETS

8.1 Visual Inspection - Inspect for loose or broken wires and dirt accumulation.

Take picture of the EMCP Panel. Note if panel is older than EMCP 3.

8.2 Panel Lights - Inspect illumination and safety lamps in all forms of operation.

MAIN TRANSFER SWITCH & SWITCHGEAR

9.1 Exterior visual inspection of Transfer Switch - Inspect overall condition and verify if control panel is operational.

9.2 Does this unit have Switchgear onsite? If Yes, Take photos.

9.3 Does this unit have stationary UPS batteries? If Yes, Take photos of the string.

START UP & RUNNING CHECKS

10.1 Battery Voltage Drop - Verify and document voltage drop, and amp draw during cranking.

10.2 Start Controls - Manual/Auto Verify proper operation and general start ability.

10.3 Record Water Temp

10.4 Record Oil Pressure

10.6 Record Fuel Pressure

10.7 Record AC Voltage on all three phases.

10.3.1 Record Water Temperature

10.4.1 Record Oil Pressure

10.5 Record Oil Temp

10.5.1 Record Oil Temperature

10.6.1 Record Fuel Pressure

10.7.1 Record Phase 1 Line to Line

10.7.2 Record Phase 2 Line to Line

10.7.3 Record Phase 3 Line to Line

10.7.4 Phase 1 Line to Neutral

10.7.5 Phase 2 Line to Neutral

10.7.6 Phase 3 Line to Neutral

10.8 Frequency Meter - Record Hz

10.8.1 Record Hertz Reading

10.9 Record AC Amps on three phases. Amperage will only be present if generator set is under load. If customer declines transfer, please note the customer representatives name that declined transfer.

10.9.1 Record Phase 1 AC Amperage

10.9.2 Record Phase 2 AC Amperage

10.9.3 Record Phase 3 AC Amperage

10.10 Alternator - Verify proper operation.

10.11 Remote Annunciators and Alarms - Test all panel and system alarms for proper operation.

10.12 Safety Controls - Test Low Oil Pressure Shutdown, High Water Temp Shutdown, Low Water Temp Shutdown, Low Water Level Shutdown for proper operation, with customer approval.

COOLING SYSTEM

11.1 Water Pump - Inspect for leaks and unusual noise or vibration during running and after shutdown.

GENERATOR - INSTALLATION/ENCLOSURE

12.1 Enclosure Condition- Inspect for damage and cleanliness.

12.2 Vibration Isolators - Inspect for broken springs or damaged cases.

12.3 Louvers - Visually inspect louver operation.

AFTER SHUTDOWN

13.1 Take oil sample

13.2 Change Engine Oil, CCV Elements, Oil Filters and Fuel Filters.

13.3 After oil is changed start engine and check for leaks. Take a picture of any leaks and note this on the report.

13.4 Verify engine oil is at the proper level and record level.

13.6 Visually inspect generator bearing.

13.8 RESET ALL CONTROLS TO AUTOMATIC AND CLOSE GENERATOR BREAKER.

TAKE PICTURES OF GENERATOR SET

14.1 Take pictures of Engine, Generator, Enclosure, Batteries, and Package Data tags.

TEST OIL QUALITY

Test for WEAR/CONTAMINATION- ADDITIVES/FORMULATION

Record- Date, hour meter, hours on oil, fluid change, filter change, Cu, Fe, Cr, Al, Pb, Sn, Si, Na, K, Mo, Ni, Ag, Ti, V, Mn, Cd, Ca, P, Zn, Mg, Ba, B.

Test for OIL FORMULATION- OIL CONDITION- OIL CONTAMINATION

Record- Date, Brand, Type, weight, fluid change, filter change, V100 ST OXI SUL NIT W A F PFc PQI

TEST RADIATOR COOLANT QUALITY

Test for CORROSION ELEMENTS - COOLANT FORMULATION

Record- Date, fluid brand, type, Cu Fe Pb Sn Al Zn NO2 Na K Mo MoO4 BO3 SiO3

Test for FREEZE/BOIL PROTECTION – CONTAMINATION

Record- Date, meter, hours on fluid, fluid brand, type, fluid change, GL FP BP pH CON PO4 TH Oil Foam

Test for COOLANT PHYSICALS

Record- Sample date, meter hours, meter on fluid, fluid brand, type, color, app, odor, PAMt, Papp, PCol, PProp

TEST AFTERCOOLER COOLANT QUALITY

Test for CORROSION ELEMENTS - COOLANT FORMULATION

Record- Date, fluid brand, type, Cu Fe Pb Sn Al Zn NO₂ Na K Mo MoO₄ BO₃ SiO₃

Test for FREEZE/BOIL PROTECTION – CONTAMINATION

Record- Date, meter, hours on fluid, fluid brand, type, fluid change, GL FP BP pH
CON PO₄ TH Oil Foam

Test for COOLANT PHYSICALS

Record- Sample date, meter hours, meter on fluid, fluid brand, type, color, app,
odor, PAmt, Papp, PCol, PProp

Level 2: Comprehensive 67-Point Inspection and maintenance

Inspect and test engine, generator, transfer switch, radiator, day tank, battery charger, engine block heater, gauges and meters. Check emergency engine safety shutdown systems. Change engine oil and replace with specified oil. Replace oil and fuel filters. Test oil and coolant for contamination and verify that it meets the manufactures' specifications. Provide a written analysis of the inspection and identify any possible areas that need service within ten working days of completion of the work. Provide a price list of recommended replacement parts and labor cost for installation of the same within ten working days of the written report. Dispose all parts and fluids per EPA standards. A level 2 inspection shall be completed every 12 months for each generator in the summer or fall

*Note- The Comprehensive 67- Point Inspection and Maintenance includes everything in the 64- Point Inspection and Maintenance but also includes changing the engine oil and the engine oil filters and the changing the fuel filters for each generator.

Level 3: Cooling System Fluid Replacement

Drain and fill the cooling system. Replace coolant hoses, including engine block heater hoses. Replace engine thermostats and test for proper operation. Dispose all parts and fluids per EPA standards. Provide written report within 10 working days of the completion of the work. A level 3 inspection shall be completed every 36 months for each generator in the summer or fall.

Level 4: Megohmeter Test

Perform a megohmeter test and provide a written analysis within ten working days after completion of the test. A level 4 inspection shall be completed every 12 months for each generator in the summer or fall.

Generator Polarization Index (PI) Test (Megohmeter test)

For each generator, over the 10-minute test period, record:

Raw megohmeter reading.

Temperature correction factor.

20 degree C corrected reading.

Provide a Polarization Index graph of these readings.

Level 5: Load Bank Test

Perform a two-hour load bank test. Provide a written analysis from the test within ten working days after completion of the test. A level 5 inspection shall be completed every 12 months for each generator in the summer or fall.

Over the 2-hour load bank testing period record:

Time, volts of each phase, amps of each phase. KW, percent of load, Hertz, RPM, hour meter, power factor, oil pressure, fuel pressure, ambient temperature, engine water temperature, exhaust temperature (left and right), engine oil temperature, turbo boost psi, coolant temperature at heat exchanger or radiator (in and out), and coolant temperature at the engine (in and out)

Level 6: Engine/Generator Inspection and Adjustment

Adjust engine valves and set to factory specifications. Check ignition and injector timing where applicable. Inspect and adjust slip ring and brushes where applicable. Check rear generator bearings, lubricate as necessary. Inspect generator wiring. Inspect space heaters. Inspect coupling and guards. Inspect the generator fan drive. Inspect meters and voltage regulator as required. Test run engine generator. Provide written report within ten working days of the completion of the work. A level 6 inspection shall be completed every 36 months for each generator in the summer or fall.

Level 9: Engine Starting Battery Replacement Program

Check complete electrical system, and make sure the battery charger is properly adjusted. Check engine starter and amperage under normal operating conditions. Remove and dispose of old lead acid batteries per EPA standards. Install new low antimony batteries. Provide written report within ten working days of the completion of the work. A level 9 inspection shall be completed every 36 months for each generator in the summer or fall.

Battery replacement:

Remove and properly dispose of lead acid batteries per EPA standards.

Clean and inspect battery cable ends.

Clean battery box as needed.

Install new batteries.

Inspect battery charger and electrical system. Adjust charger as needed.

Check engine starter amperage.

Additional service work:

Fuel

Level 31: Fuel Testing

Comprehensive. Check for degraded fuel, microbial contamination, and other standard parameters. Provide written report of checks and testing results within ten working days of the completion of the work. The fuel sample shall be taken from the

100,000-gal tank fuel filter. A level 31 inspection shall be completed every 12 months for each generator in the summer or fall.

Fuel sampling- test for and record:

ASTM D287 API Specific Gravity- 30.0 minimum.

ASTM D86 Distillation rates at IBP, 10%, 50% 90% FBP

ASTM D4737 Cetane Index- 40.0 minimum

Biodiesel Content

ASTM D5453 sulfur- 15 ppm max

ASTM D93 Flash- 125 degrees F min

ASTM D6468 Stability- 80% minimum

ASTM D2500 Cloud Point- less than minus 40 degrees F

ASTM D6371 CFPP- less than minus 40 degrees F

Microbial- less than 1,000 RLU

ASTM D6304 Karl-Fisher- less than 100 ppm

Electrical Services

Level 11: Switches, breakers, relays. Transfer Switch and Switch gear Inspection, Adjustment, and Thermal Imaging.

Switches, breakers, relays. Clean transfer switches and cabinets, Replace PLC batteries. Check voltage drop across main contacts. Repair/replace incandescent lamps. Test bypass isolation feature. Visual inspection for evidence of arcing and/or hot spots. Lubricate switch. Check operation of timers, remote start contacts and in-phase monitor. Dispose all parts and fluids per EPA standards. Provide written report of checks and testing results within ten working days of the completion of the work. A level 11 inspection shall be completed every 12 months for each of the above components in the summer or fall.

Stationary Batteries for Emergency Switchgear Operation

Inspection and testing.

Bldg 154 batteries

Chiller MCC- 8 batteries- MTI Technologies, 6V-4-OPzS-200, 200 Ah

Bldg 153 batteries:

Generator BUS A- 24 batteries- FIAMM, SD5, 80 Ah

Generator BUS B2- 12 batteries- FIAMM, SD17, 320 Ah

Generator BUS B1- 24 batteries- FIAMM, SD7, 120 Ah

Utility BUS A- 24 batteries- FIAMM, SD7, 120 Ah

Utility BUS B- 24 batteries- FIAMM, SD5, 80 Ah

Battery cell water level. Specific gravity of each battery cell. Visual inspection of batteries. Battery voltage, impedance, and capacity testing. Clean battery terminals and all battery connections as needed.

Battery charger inspection and testing. Visual inspection, operation, voltage, and amperage. Clean all electrical connections as needed.

Provide a written analysis of all checks and testing within ten working days after completion of the test. This service shall be completed every 12 months in the summer or fall.

4.0 General Requirements

4.01 Work Restrictions & Conditions

A. Site Security Access

1. Access to the construction site is controlled by a security fence and visitor/contractor check-in/check-out system. All contractor/subcontractor employees shall sign-in and out at the main entrance gate with the USDA sign and always wear a contractor/visitor identification badge while on the site. The ID badges will be turned in at the end of the workday. A current government-issued identification with a picture ID is required for entry.
2. This project construction site is located in the site security protection zone. No contractor or business vehicle tag will be required for this portion of the site.
3. Construction vehicles will be allowed access adjacent to the work; contractor employee's personal vehicles shall be parked in the facility parking lots.
4. The Contractor shall use only the service roads and access routes approved by the Contracting Officer's Representative (COR).
5. Work shall be confined to the areas described in the Statement of Work. Unless accompanied by a NCAH/USDA employee, the Contractor, subcontractors, and their employees shall not enter buildings or facilities not specifically part of this project.
6. Additional security requirements may be imposed when the Federal Government raises the Homeland Security Alert Level. Additional directions will be provided if the situation occurs.
7. Failure to comply with access requirements shall be adequate grounds for removal of the Contractor/subcontractor employees from the site and barring further site access to individuals.
8. No "tailgating" of USDA employees through secure entrances is allowed.

9. No animals/pets are allowed to be brought on the site regardless of whether they are left in a vehicle in the parking lot or not.
- B. Work Hours: Regular work hours for the site are 7:00am to 4:30pm, Monday through Friday, excluding Government holidays.
- C. Work Outside Regular Work Hours: Work scheduled outside regular work hours, including late hours, Saturdays, Sundays, and Government holidays, require Contracting Officer's approval in advance. Make application to the COR and Contracting Officer at least 5 calendar days prior to such work to allow arrangements to be made by the Government for access to the work area and inspection & monitoring arrangements. Requests shall include the exact dates, hours, location, and purpose of the exception. If approved, the COR will coordinate access with the site security office.

4.02 Quality Control Requirements

- A. COR shall inspect the completed work for approval with the Contractor prior to considering the work to be complete.

4.03 Temporary Facilities

- A. Utilities: The existing USDA utilities at the site may be used by the Contractor for completion of the contract work at no cost to the Contractor. The Contractor shall be responsible for making and removing any utility connections.
- B. Telephones: The Contractor shall equip all his foremen and work leaders with cell phones as necessary to coordinate the work effort. The Government will not provide any phone service to the project.
- C. Toilet Facilities: The Contractor is allowed to use Public Toilet Facilities on the USDA campus.
- D. Smoking is only allowed in the outdoor smoking building located at the Southeast corner of Building 20. The Contractor will need to be escorted out of Building 20 to use the smoking location, no propping of doors is allowed.
- E. Fall Protection Program – Provide a copy of Company Fall Protection Plan to COR prior to commencing work for review.

4.04 Coordination

- A. The Contractor shall coordinate all work with the Contracting Officer's Representative.

- B. The Contractor shall submit a proposed schedule of work for review and approval by the Contracting Officer's Representative within ten (10) days of task order award. The schedule shall be updated as needed.
- C. The contractor shall be solely responsible for coordinating work with all subcontractors and ensuring that all items of joint use in conjunction with installations are completed.

4.05 Special Provisions

- A. There are buildings on campus that are bio-security facilities and contains biohazard materials; therefore, the Contractor must complete any area specific training before entry and follow bio-security procedures for entering and exiting any such facility. In addition, any tools or equipment carried into a bio-security facility must be decontaminated before they can be removed from the bio-security facility.
- B. The Contractor shall confine all operations to within the work limits of the project area and exercise special care to maintain natural surroundings undamaged.
- C. Finished surfaces of existing facilities that are affected, marred, scratched, or damaged by the Contractor shall be refinished to match original condition.
 - 1. Patching material shall be of the same type, style, and thickness, and shall be finished to match existing adjacent surface construction in color and texture.
 - 2. Patching material, paint color, paint material and paint application methods shall be approved in advance by the Contracting Officer's Representative.
- D. No building structural members shall be cut or altered without prior approval of the Contracting Officer.
- E. Any damage resulting from the Contractor's operation shall be brought to the attention of the Contracting Officer's Representative and Contracting Officer immediately.
- F. The Contractor shall take all necessary and reasonable measures to keep the work site clean of trash and debris. Work areas shall be cleaned immediately as work in that area is completed, and before moving to a new work site. Place all trash and debris in Contractor provided OSHA approved containers, remove, and dispose of trash off site daily.

- G. The Contractor shall move all materials and equipment, including ladders and scaffolding from the site at the completion of each day's operation unless otherwise approved by the Contracting Officer's Representative.
- H. The Contractor shall provide proper safety equipment to workmen and ensure a safe environment for employees and the general public at all times. The contractor shall work to ensure free, unobstructed, and safe access to and about the work area.

END OF SECTION