

SPECIFICATION FOR
20 TON ABRASIVE BLAST UNIT with STORAGE HOPPER

1. **SCOPE** - This specification contains the requirements for a portable, skid mounted, self-contained, new ABRASIVE BLAST UNIT with STORAGE HOPPER.
2. **APPLICABLE DOCUMENTS** - The following documents form a part of this specification to the extent specified herein. Unless otherwise indicated, the version in effect on the date the request for purchase is published shall apply.
 - 2.1 **THE CODE OF FEDERAL REGULATIONS**
 - 29 CFR 1910- Occupational Safety and Health Standards
 - 29 CFR 1915- Occupational Safety and Health for Shipyard Employment
 - 40 CFR 261- Identification and Listing of Hazardous Waste

(Information is available online at: www.gpoaccess.gov/ecfr)
 - 2.2 **AMERICAN NATIONAL STANDARDS INSTITUTE, INC. (ANSI)**
 - Z535.4-Product Safety Signs and Labels

(Copy of ANSI Publications may be ordered from the website: <http://www.ansi.org>)
 - 2.3 **AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)**
 - ASME - SECTION VIII - Unfired Pressure Vessel Code

(Application for copies should be addressed to ASME International, Three Park Avenue, M/S 10E, New York, NY, 10016-5990)
 - 2.4 **AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR CONDITIONING ENGINEERS (ASHRAE)**
 - ASHRAE Standard 52.2 - Method of Testing General Ventilation Air-Cleaning Devices for Removal Efficiency by Particle Size

(Application for copies should be addressed to ASHRAE, 1791 Tullie Circle NE, Atlanta, GA 30329-2305)
 - 2.5 **AMERICAN WELDING SOCIETY (AWS)**
 - AWS-D1 Structural Welding Code

(Application for copies should be addressed to the American Welding Society, 550550 N.W. LeJeune Road, Miami, Florida 33126)
 - 2.6 **NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)**
 - NFPA 70- National Electric Code
 - NFPA 79- Electrical Standards for Industrial Equipment

(Application for copies should be addressed to National Fire Protection Association, 470 Atlantic Ave., Boston, MA 02210)
 - 2.7 **NATIONAL ELECTRICAL MANUFACTURERS' ASSOCIATION (NEMA)**
 - ICS- Industrial Controls and Systems
 - MGI- Motors and Generators

SPECIFICATION FOR
20 TON ABRASIVE BLAST UNIT with STORAGE HOPPER

(Information is available online at: www.nema.org)

2.8 **WASHINGTON STATE ADMINISTRATION CODE (WAC)**

- WAC-173-303- Washington Dangerous Waste Regulations

(Copies of these documents are available online at: <http://www.gpoaccess.gov/>)

2.8 **INTERNATIONAL ORGANIZATION FOR STANDARDIZATION (ISO)**

- ISO 3861- Rubber Hoses for Sand and Grit Blasting—Specification

(Application for copies should be addressed to the American National Standards Institute, 11 West 42nd St, New York, NY 10036)

SPECIFICATION FOR
20 TON ABRASIVE BLAST UNIT with STORAGE HOPPER

3 **REQUIREMENTS:**

3.1 **GENERAL DESCRIPTION OF UNIT** - This contract requires delivery of a portable, skid mounted, self-contained ABRASIVE BLAST UNIT with STORAGE HOPPER. The system shall be used to store steel grit abrasive blast media and to abrasive blast metal surfaces.

3.2 **CONDITIONS OF SERVICE AND PERFORMANCE:** - The following service and operational conditions shall apply to the equipment delivered under this specification.

3.2.1 **Operating Environment** - The proposed system will be operated in a heavy-duty marine industrial environment and shall be capable of continuous operation over an extended period of time with minimal maintenance and upkeep. The blasting operation will occur in a remote location from the abrasive blast machine.

3.2.2 **Equipment Size** - The proposed system shall be used in an industrial manufacturing environment having limited space.

- Maximum overall dimensions shall be 12' high x 8'-6" wide x 10' long (excluding access ladder)
- Maximum overall weight of 10,000 pounds when empty.

3.2.3 **Environmental Conditions** - The unit shall be designed to operate in a salt and dust laden outdoor industrial environment, subject to wind driven rain, sleet and snow.

- Temperature Range: 32° Fahrenheit to 110 ° Fahrenheit
- Relative Humidity: up to 100% Non-Condensing

3.2.4 **Blast Media** - Steel grit G80, G50, G40 or G25/50 blend shall be used.

3.2.5 **Electrical** - The equipment delivered and all accessory parts shall operate from a single source of primary power, which is 110 VAC ($\pm 5\%$), single-phase. The proposed system shall include all transformers required for individual circuits such as control power, etc.

3.2.5.1 All Electrical Components including motors, starters, relays, switches, and wiring shall conform to and be located in accordance with the applicable NFPA, NEMA, and ANSI standards for the intended application.

3.2.5.2 A supply circuit disconnect device, either a fusible motor circuit switch or circuit breaker, shall be provided and installed on the equipment.

3.2.5.3 Motors shall be rated for continuous duty. Motors shall be equipped with ball bearings of the sealed and permanently lubricated type. All electrical motors shall meet NEMA-MG1 requirements.

3.2.5.4 Main and auxiliary control circuits shall operate on a circuit of 120 volts or less derived from isolation transformers integral with the equipment.

3.2.5.5 Grounding of equipment must conform to NFPA 70 requirements for static dissipation.

3.2.6 **Compressed air** - The unit shall operate from two - The unit shall operate from a single source of dry, compressed air which delivers 500 CFM at 100 PSIG based upon the performance of two (2) 7/16" diameter blast nozzles.

3.3 **GENERAL EQUIPMENT REQUIREMENTS** - All materials and parts comprising the system shall be new and of current design and manufacture. Standard, off the shelf components with proven reliability shall be used wherever possible to increase performance, reliability and cost. The equipment shall be one of the manufacturer's current production models which, on the day this solicitation is issued, has been designed, engineered and sold, or is being offered for sale through advertisements or manufacturer's published catalogs or brochures. Products such as prototype unit, preproduction model, or experimental unit do not

SPECIFICATION FOR
20 TON ABRASIVE BLAST UNIT with STORAGE HOPPER

qualify as meeting this requirement. The equipment shall be complete, so that when connected to the utilities identified herein, it can be used for the function for which it is designed and constructed.

- 3.3.1 **Personnel Safety and Health Requirements** - All machine parts, components, mechanisms, and assemblies furnished on the unit shall comply with all specific requirements of "OSHA Safety and Health Standard (29CFR1910), General Industry" that are applicable to the equipment itself. Covers, platforms, guardrails, belt guards, and safety devices shall be provided for all parts of the equipment that present a safety hazard. The safety devices shall not interfere with the operation or maintenance of the equipment. The safety devices shall be removable to facilitate inspection, maintenance, and repair of the part. For all equipment that requires preventative maintenance and servicing, provide access ladders, platforms, safety rails with toe boards and devices as required to meet 29 CFR 1910 Subpart D to allow workers to perform the maintenance without the use of personal fall protection. Additional safety and health requirements shall be as specified in other paragraphs of this specification.
- 3.3.2 **NRTL Listing or NRTL Field Inspection and Approval** - The blast and recovery system shall be listed or approved by one of the following methods:
- 3.3.2.1 **Nationally Recognized Testing Laboratory (NRTL) Listing and Labeling** - The equipment specified herein shall be listed and labeled by an Occupational Safety & Health Administration (OSHA) approved Nationally Recognized Testing Laboratory. Test data reports shall be furnished for review.
- 3.3.2.2 **Nationally Recognized Testing Laboratory (NRTL) Field Inspection** - The equipment specified herein shall be field inspected and approved by an Occupational Safety & Health Administration (OSHA) approved Nationally Recognized Testing Laboratory. Test data reports shall be furnished for review.
- 3.3.3 **Energy Isolating Devices** - The equipment shall be provided with energy isolating devices (e.g., power switches, safety switches, circuit breakers, valves, etc.) that protect personnel from the release of hazardous energy. The devices shall be designed and manufactured such that they can be padlocked in the user selected position (ON or OFF, OPEN or CLOSED) to prevent inadvertent or unauthorized change. All energy isolating devices installed or modified shall be capable of being locked. This includes both mechanical and electrical devices.
- 3.3.4 **Audible Noise Levels** - During normal operation, the dust collector assembly shall not produce noise levels greater than 84 dB(A) as measured on the "A" scale and 92 dB(C) at any point three feet from the unit, as measured on the "C" scale of a standard sound level meter at slow response (29 CFR 1910.95, Occupational Noise Exposure Standard). Excluding the noise level at the nozzle.
- 3.3.5 **Environmental Protection** - The unit shall be designed and constructed so that during operation, service, transportation and storage conditions described herein, including final disposal, the equipment will comply with all applicable Environmental Protection Agency (EPA) and Occupational Safety and Health Agency (OSHA) and State of Washington Department of Ecology (WDOE) restrictions for materials classified as hazardous to the environment in effect on the date of the contract. The equipment described herein shall not contain or emit material hazardous to the ecological system as prescribed by federal, state, and local statutes in effect at the point of installation.
- 3.3.6 **Hazardous Material Exclusions** - Materials being provided as part of the equipment shall be free of known hazardous materials. Definitions of hazardous materials are specified in the latest version, including revisions adopted during the term of the contract, of Federal Standard No. 313.
- 3.3.6.1 Notwithstanding any other hazardous material usage permitted in this contract, radioactive materials or instruments capable of producing ionizing radiation as well as materials which contain asbestos, mercury, cadmium, lithium, methylene chloride, lead ($\geq 0.06\%$), or polychlorinated biphenyls (PCB's) are prohibited.

SPECIFICATION FOR
20 TON ABRASIVE BLAST UNIT with STORAGE HOPPER

- 3.3.7 **Painting** - The exterior and interior of all enclosures, and all components, shall be painted or fabricated of materials which are corrosion resistant. The painting shall be federal standard green (14187) in accordance with the following requirements:
- 3.3.7.1 General requirements.
- (A) Components shall be prepared and coated prior to final assembly.
 - (B) The exterior of all enclosures and components shall be primed and painted unless they are fabricated of stainless steel, fiberglass, plastic, or carbon steel hot dip galvanized per ASTM A 123.
 - (C) Coatings shall be applied in accordance with the manufacturer's instructions.
- 3.3.7.2 Preparation.
- (A) Prior to galvanizing or blasting, weld spatter and other surface imperfections shall be removed by grinding.
 - (B) Components to be coated shall be cleaned to SSPC-SP1 (solvent cleaning) prior to abrasive blasting. This step assures the removal of oil, salt, and other surface contamination which can prevent proper paint adhesion in spite of subsequent abrasive blasting.
 - (C) All sides of components shall be abrasive blasted to SSPC-SP10, (Steel Structures Painting Council-Surface Preparation Standard number 10, "Near White Blast"), with a surface profile of 1.5 to 2.5 mils.
- 3.3.7.3 External carbon steel components which conduct airflow, (for example ducts, hoppers, filter housing, plenums, transitions, silencers, and other air-moving components shall be prepared and either hot dip galvanized or primed with an inorganic zinc paint and top-coated High Solids Epoxy Coating (such as Devco Devran 224HS)) and painted with 2 part urethane paint with UV inhibitor, having a dry film thickness of 5 to 8 mils.
- 3.3.7.4 Steel structure, (for example rigging structure, sub-foundation for the fan, deck plates, stiffeners & braces, equipment mounts & supports, access platforms, and other mechanical components). Either hot dip galvanized per ASTM A123 or primed with an inorganic zinc paint and top-coated High Solids Epoxy Coating (such as Devco Devran 224HS) and painted with 2 part urethane paint with UV inhibitor, having a dry film thickness of 5 to 8 mils.
- 3.3.7.5 Paints containing lead, cadmium, or hexavalent chromium at 0.01% (dry weight) or more are prohibited.
- 3.3.8 **Caution - Warning Plates** - Corrosion resistant "Caution" or "Warning" plates shall be securely attached to the equipment in visible locations, with any safety precautions to be observed by the operator or maintenance personnel permanently marked on the plates.
- 3.3.9 **Informational Plates** - The following informational plates shall be marked by engraving or photo imaging, on wear and corrosion resistant metal, permanently affixed to the equipment. Identification Plate - The following information shall be on the plate: Nomenclature, Contractor's name, manufacturer's name, equipment model number, equipment serial number, electrical utilities (Volts, Full Load Amps, Frequency, and Phases), date of manufacture, contract number and any other pertinent information for identifying the part as a unique component of the system.
- 3.3.9.1 PCB Label Plate - A label plate containing the PCB Certification information shall be permanently affixed to the equipment in the vicinity of the manufacturer's identification plate.
- 3.3.10 **Bearings** - All bearings contained in the equipment and the entire system must be United States (U.S.) or Canadian manufactured. If they are not U.S. or Canadian manufactured bearings, the vendor must provide a list of exact U.S. or Canadian made equivalent bearings that can be used for replacement of each bearing within this equipment or system.
- 3.4 **REQUIREMENTS FOR ABRASIVE BLAST UNIT with HOPPER**
- 3.4.1 **Abrasive Blast Unit** shall include:

SPECIFICATION FOR
20 TON ABRASIVE BLAST UNIT with STORAGE HOPPER

- 3.4.1.1 ASME Section VIII coded tank, certified for a working pressure of 175 PSIG (minimum).
- 3.4.1.2 Two – 6.5 cubic foot capacity, single chamber, conical bottom blast vessel.
- 3.4.1.3 Overpressure protection shall be provided by means of a rupture disc assembly to protect the equipment in case of pressures exceeding the working pressure rating of each pressure vessel.
- 3.4.1.4 An inlet plunger/pop up valve shall be installed between the vessel and the hopper on each blast vessel to control the filling of the vessel. The plunger/pop up will be of a cylinder/diaphragm power design. Plunger/pop up that uses the pressurization air to close will not be accepted.
- 3.4.1.5 Integrated Control System, which works in conjunction with each blast vessel to provide a fully automatic refill system when the deadman switch is released/turned off.
- 3.4.1.6 The vessels shall depressurize to the filter housing.
- 3.4.1.7 Each outlet (2 outlets) shall include No. 7 nozzles, one for each hose.
- 3.4.1.8 Each outlet (2 outlets) shall include an electric 3 wire trigger "dead-man" remote control with 125 feet of control cord and switch. The trigger switch shall have electric "dead man" controls - an on-off trigger switch controlling the compressed air with media (blast)/compressed air only (blow down) functions of the blast machine that defaults to "off" when released by the operator. The dead man control shall be the type that requires continuous pressure, and stops and secures the air pressure to the blast nozzle and depressurizes the vessel automatically in the event the operator drops the blast nozzle.
- 3.4.1.9 Each blast vessel piping system shall have the following: one compressed air valve for blasting, one media control, one pot pressurization valve, one vessel depressurization/blow down valve, and one plunger/pop up media loading valve.
- 3.4.1.10 One (1) 4 inch or larger diameter compressed air manifold providing air to the blast vessels.
- 3.4.1.11 The compressed air manifold shall have a ball valve and pressure relief valve provided for draining of collected moisture and relief of air pressure (one valve located at each end of the manifold).
- 3.4.1.12 The manifold shall be equipped with 1 ½" air piping to each blast vessel metering/blowdown valve.
- 3.4.2 **Storage Hopper** shall include:
 - 3.4.2.1 The hopper shall be designed with 10 gauge steel.
 - 3.4.2.2 A working volume capacity of 20 tons of G50 steel grit blast media. Working volume is the amount of abrasive the hopper can hold and discharge without shoveling or external assistance (any material left in the hopper when fully discharged is not considered part of working volume).
 - 3.4.2.3 Top access with removable or collapsible (to the outside) OSHA guardrails and external access ladder with swing gate to provide access to the top of the unit.
 - 3.4.2.4 The hopper shall be air and water tight with gasketed manway for interior access to each blast vessel (2 required) without the use of tools to access each plunger/popup valve.
 - 3.4.2.5 A 3" NPT threaded drain plug above each blast pot to empty the hopper.
- 3.4.3 **Classification unit** shall include the following:
 - 3.4.3.1 The unit shall include an inlet external vacuum port for a 5 inch ID vacuum hose connection.

SPECIFICATION FOR
20 TON ABRASIVE BLAST UNIT with STORAGE HOPPER

- 3.4.3.2 Abrasive inlet into the classifier shall include one 5 inch ID hose connection.
- 3.4.3.3 The classification system shall be sized to recycle abrasive at a minimum of 3 ton/hr.
- 3.4.3.4 The inlet to the classification system shall be designed with replaceable lined wear resistant plate(s).
- 3.4.3.5 The classifier shall be a 7gauge (minimum) carbon steel.
- 3.4.3.6 The classification shaker screen system shall eliminate abrasive or waste larger than a number 4 mesh (3/16 inch screen).
- 3.4.3.7 Cleanout shall be provided to classification shaker screen.
- 3.4.3.8 Heavy trash/debris larger than the classification screen openings shall be collected in a 6 inch (minimum) trash discharge pipe and fitted with an air-tight manual dump valve.
- 3.4.3.9 Unclean abrasive and fines shall pass through an air wash system, which shall remove the fines without the use of screws or bucket elevator.
- 3.4.3.10 The air shall be filtered through the Vacuum Rated Dust Collector.
- 3.4.3.11 The remaining unclean abrasive shall be sent through a magnetic drum separator removing all non-magnetic particles and discharging the non-magnetic particles through a 6 inch (minimum) pipe and fitted with an air-tight dump valve. Magnetic drum will be a minimum 15" diameter.
- 3.4.3.12 The debris from the magnetic separator shall be collected in a 4 inch (minimum) trash discharge pipe and fitted with an air-tight manual dump valve.
- 3.4.3.13 The recycled abrasive shall dump into a second single chamber transfer vessel.
- 3.4.3.14 The second single chamber transfer vessel shall not exceed 5 cubic feet.
- 3.4.3.15 The single chamber transfer vessel shall automatically transfer the abrasive to the hopper through a 2 inch diameter static dissipating blast hose for reuse.
- 3.4.4 **Vacuum Rated Dust Collector** shall include:
 - 3.4.4.1 All exhaust airflow from the abrasive system shall be filtered through the dust collector. The dust collector filters shall be of the cylindrical (round) cartridge style rated at 2000 CFM (minimum) with an air to cloth ratio of 3 or greater cloth area. Filter element efficiency (i.e. dust weight arrestance) to be a MERV 13 rating or higher. Filter efficiency shall meet the ASHRAE 52.2 minimum requirements, and shall be verified by independent laboratory test results (see **Error! Reference source not found.**). Test results are required to be submitted with the Offeror's proposal (see 3.5.2.9).
 - 3.4.4.2 Minimum of 2000 CFM capacity for the dust collector.
 - 3.4.4.3 The dust collector shall include automatic, adjustable, solid state filter cleaning controls. Solenoid operated diaphragm valves shall sequentially introduce compressed air pulses into each filter or filter bank. Cleaning air manifold(s), diaphragm valves, and pulse cleaning nozzle piping shall be factory assembled. The cleaning system shall operate with 100-125 PSIG compressed air.
 - 3.4.4.4 An aneroid (i.e. magnehelic) gage shall be provided for monitoring differential pressure across filter elements (not to be mounted in the control panel).

SPECIFICATION FOR
20 TON ABRASIVE BLAST UNIT with STORAGE HOPPER

- 3.4.4.5 The dust collector shall operate under the negative pressure condition of 29 inches HG.
- 3.4.4.6 The hopper discharge shall be fitted with an air-tight gear operated-hand wheel butterfly dump valve for emptying accumulated dust and debris into standard 55 gallon drums (slide gates are not acceptable). 55 gallon drum assemblies with covers, adapters, hoses, and other required hardware shall be provided.
- 3.4.5 **Main Disconnect Panel** - A NEMA 4X stainless steel, heavy duty, safety switch (visible blade type) panel shall be included to allow the power to the main control panel to be isolated.
- 3.4.6 **Main Control Panel** shall include:
- 3.4.6.1 NEMA 4X stainless steel enclosure, with a fused main disconnect switch or circuit breaker for single point electrical disconnect to the entire system.
- 3.4.6.2 A lockable hinged stainless steel window kit to cover switches/buttons on the exterior of the panel, excluding the emergency stop button.
- 3.4.6.3 Install a stainless steel cover over the main control panel lip to eliminate snow or rain water from accumulating and entering the panel.
- 3.4.6.4 Exterior control panel shall include the following controls, buttons, switches or gage to operate the system:
- a. Screen classifier on/off light, which will shut down the external vacuum via auxiliary connection, when light is off.
 - b. Magnetic separator on/off light, which will shut down the external vacuum via auxiliary connection, when light is off.
 - c. Dust collector air pulse on/off switch, which will shut down the external vacuum via auxiliary connection.
 - d. Hour meter for the classifier.
 - e. High level failure light for each of the screen trash, magnet trash and magnet grit, which will shut down the external vacuum via auxiliary connection.
 - f. Emergency stop button.
 - g. Phase monitor failure light.
 - h. On/off switch with indicator light for deadman switch for each (2 total) blast vessel.
 - i. Three way switch for each (2 total) blast vessel to change from blowdown, blast and choke.
 - j. Hour meter for each (2 total) blast vessel.
 - k. Pressure regulator with gage on the exterior of the panel to adjust and indicate the blast pressure for each (2 total) blast vessel.
 - l. Pressure gage indicating the manifold pressure to the system.
 - m. Adjustable blow down delay timer in panel to eliminate accidental trigger flutter.
 - n. Panel control pressure gage.
 - o. Individual circuit breaker for each blast vessel trigger resettable without going into the panel.
 - p. Adjust vessel media valve remotely from panel without going into panel.
- 3.4.6.5 An auxiliary relay inside the panel to allow for an external vacuum to be interlocked with the unit to shut down the vacuum if a failure occurs. The auxiliary relay shall be wired to an interlock plug (Hubbel plug 2411SW or equal).
- 3.4.6.6 Motor starters, overload protection devices, remote control circuits for solenoid operated valves, and all necessary controls for the skid system
- 3.4.6.7 Control panel shall include a timer circuit for automatic cleaning of the dust collector filters.
- 3.4.7 **Skid and Frame** shall include:
- 3.4.7.1 For portability, the entire unit shall be mounted on a single heavy-duty skid base.

SPECIFICATION FOR
20 TON ABRASIVE BLAST UNIT with STORAGE HOPPER

- 3.4.7.2 The skid shall provide adequate bracing and support to permit placing the entire assembly on uneven surfaces without causing equipment damage, distortion or overstress. The base and associated framework shall be gusseted and cross-braced as necessary to withstand the stresses, vibration and shock associated with rough handling and transport of the unit by overhead crane or flat bed truck over rough surfaces.
- 3.4.7.3 Forklift pockets - The base shall also have fully enclosed forklift slots for handling with a forklift truck. The forklift slots shall be 12 inches wide by 6 inches high rectangular tube (+/- 1/2-inch) and spaced 52" to 72" apart (measured from outside edge to outside edge of each forklift slot) on the length of the skid.
- 3.4.7.4 The skid shall have OSHA handrails and access ladder with swing gate.
- 3.4.7.5 **Lifting Attachments** - The skid shall be equipped with four gross weight lifting pads correctly spaced for even and level lifting by a single crane hook without spreader bar(s). The lifting pads and attaching structure shall provide a 3 to 1 (minimum) safety factor based on material yield strength, or, 5 to 1 (minimum) based on ultimate strength, and calculated as though the actual weight were loaded on two pads.
- 3.4.7.5.1 The bearing strength shall be based upon 1/5 of 150% of the ultimate strength of the lifting attachment material.
- 3.4.7.5.2 The lifting attachments shall be sized based on actual weights plus 10% for unexpected growth in the weight of the load. The resulting value shall be further increased to reflect the loads induced by the angle the slings make to the plane the lifting attachments lie on. The attachments shall be oriented so the slings shall not pull out of the plane of the individual lifting attachment by more than 5° unless they are designed to withstand the resulting side load. In addition, the individual loads for each point shall be calculated based on the configuration of the rigged equipment and the location of its center of gravity. These final values shall be referred to as the Working Load Limit (WLL).
- 3.4.7.5.3 When installing the 4 lifting attachments, only half of them shall be assumed to carry the load. A lift sketch detailing the required spread, capacity and orientation of that gear shall be provided for review at the time of the submittal of the equipment design.
- 3.4.7.5.4 The structure supporting the lifting attachments shall be designed to sustain the various lateral loads imparted by the arrangement of the lifting attachments and the induced sling angle loads on a buckling analysis per the American Institute of Steel Construction (AISC), Allowable Stress Design.
- 3.4.7.5.5 The lifting attachments are required to withstand a load test of 200% +5%-0% of the Working Load Limit (WLL) for 2 minutes. Acceptance criteria shall be: No bending, cracking, or permanent deformation of the lifting attachments or associated structure. The contractor's certified representative will perform the load test and inspection requirements of American Welding Society (AWS) D1.1 and submit documentation of the satisfactory results of all the various tests. The lifting attachments shall be labeled with the WLL and the test date.
- 3.4.7.5.5.1 All calculations required for the design of the lift points shall be performed by a Professional Engineer, and shall be provided for review at the time of the submittal of the equipment design.
- 3.4.7.5.6 In certain cases, with prior concurrence of the cognizant technical Code at Puget Sound Naval Shipyard & Intermediate Maintenance Facility, the load test may be waived and a magnetic particle test (MT) of the attachment weld substituted, meeting the acceptance criteria of MIL-STD-2035, Class 3 or equivalent standard as approved by the Government, provided the testing is performed by a certified third party and documentation of the satisfactory results are provided with the receipt of the equipment. Each lifting attachments shall be stamped with the WLL and the wording "MT" and the date certified.

3.5 **TECHNICAL DATA TO BE PROVIDED**

SPECIFICATION FOR
20 TON ABRASIVE BLAST UNIT with STORAGE HOPPER

- 3.5.1 **Lifting Attachment Certification** - Concurrent with equipment delivery, the contractor shall provide with the manufacturer's certification document which reflects a record of the requirements of section 3.4.7.
- 3.5.2 **Air Operating Permit Information** -The contractor shall provide the Government with the following information within 30 days after the effective date of the contract so the equipment can be locally permitted for use:
- 3.5.2.1 Specify the manufacturer and model number of the vacuum. Serial numbers are not acceptable.
- 3.5.2.2 Specify the flow rate in actual cubic feet per minute (acfm).
- 3.5.2.3 Specify the type and quantity of filters that will be installed in the vacuum.
- 3.5.2.4 Specify the filter fabric material that will be installed in the vacuum.
- 3.5.2.5 Specify the air to cloth ratio of the filters that will be installed in the vacuum.
- 3.5.2.6 Specify the filter cleaning method of the filters that will be installed in the vacuum.
- 3.5.2.7 Specify the configuration of the vacuum (induced fan on the clean side [negative pressure] or forced fan on the dirty side [positive pressure]).
- 3.5.2.8 Specify the internal stack diameter or rectangular cross-sectional dimensions (in inches) of the ventilation stack of the vacuum.
- 3.5.2.9 Specify the height of the ventilation stack of the vacuum above ground level (in feet) in the operating position.
- 3.5.3 **Filter Efficiency Certification** - Filter efficiency shall meet the requirements of Section 3.4.4 and shall be verified by an independent testing laboratory. A copy of the filter efficiency certification shall be provided with the Offeror's proposal.
- 3.5.4 **NRTL Listing or NRTL Field Inspection and Approval Compliance Statement** - The contractor shall provide signed, written certification of compliance to the requirements of 3.3.2 - NRTL listing or NRTL field inspection and approval. Failure to provide this certification will delay acceptance of the equipment, and could result in rejection for failure to comply with the terms of the contract.
- 3.5.5 **PCB Certification** - The Contractor shall provide written certification from the manufacturer that the equipment contains no detectable PCBs (less than two (2) part-per-million (ppm)). The certification shall be on manufacturer's letterhead, and signed by a company official who is empowered to provide same. It is acceptable that this list is included in each of the operator/Maintenance/Repair manuals.
- 3.5.6 **Warranty** - Supplies and services furnished shall be covered by 1 (one) year warranty from defects in design, materials and workmanship. Acceptance of the manufacturer's standard commercial warranty shall not minimize the rights of the government under clauses in the contract, and in any conflict that arises between the terms and conditions of the contract and manufacturer's warranty, the terms and conditions of the contract shall take precedence. The warranty period shall commence when final acceptance has been achieved as determined when all contract line item numbers have been processed through Wide Area Workflow (WAWF) as indicated per paragraph 4.4.5

4. **QUALITY ASSURANCE PROVISIONS**

- 4.1 **RESPONSIBILITY FOR INSPECTION** - The Contractor shall be responsible for the performance of all inspection requirements (examinations and tests) as specified herein. The Contractor may use his own

SPECIFICATION FOR
20 TON ABRASIVE BLAST UNIT with STORAGE HOPPER

facility or any other facility suitable for the performance of the inspection requirements specified herein. The Government reserves the right to perform any of the inspections set forth in this specification, where such inspections are deemed necessary to assure supplies and services conform to the prescribed requirements.

4.2 **RESPONSIBILITY FOR COMPLIANCE** - All items shall meet all requirements of sections 3 and 5. The inspection(s) set forth in this specification shall become part of the contractor's overall inspection system or quality program. The absence of any inspection requirements in the specification shall not relieve the contractor of the responsibility of assuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling inspections, as part of manufacturing operations, is an acceptable practice to ascertain conformance to requirements; however, this does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to accept defective material.

4.3 **BASIC PERFORMANCE TESTS** - Basic performance tests shall be conducted on the primary equipment and all associated equipment to the extent practicable, to demonstrate functionality. The tests may be performed by the Manufacturer, either by personnel of their service organization directly, or by an independent testing agency.

4.3.1 **At the Option of the Government** - Tests may be witnessed by a representative of Puget Sound Naval Shipyard or shall have the option of sending their technical representative(s) to witness the tests. The Contractor shall schedule and coordinate the test at origin. At least fifteen days prior to the test, the Contractor shall notify the Shipyard Point of Contact of the scheduled date, time, and location of the test.

4.4 **INSPECTION AT DESTINATION**

4.4.1 **Initial Test And Grooming** - The equipment delivered with the system shall be inspected by the Government for mechanical integrity as follows:

- All welds shall be inspected for integrity and appearance.
- Surfaces shall be examined for sharp edges and burrs.
- Fasteners shall be checked for tightness.
- Paint will be checked for flaking and blistering.
- The fit of parts shall be observed, with particular reference to the interchangeability of those, which are likely to require replacement.
- Review data on motor and blower speed along with motor and blower sheave sizes to achieve the performance data called out in the specification (data shall be supplied by the contractor to the government before inspection).

Note: Faults will be duly recorded and presented to the contractor for rectification.

4.4.2 **Operational Tests** - Upon satisfactory completion of the tests above, the equipment shall be setup by the government for an operational test. The unit shall be exercised to the extent necessary to prove proper operation in accordance with specification requirements. The system shall function, without failure, for the duration of this test period. If a failure occurs during operational testing, the contractor shall be duly notified for rectification and upon repair the tests shall be restarted from the first test. Three failures without completion of the operational tests shall be considered cause for rejection of the system. For the purpose of this test, a "failure" is defined as any equipment malfunction, which requires remedial action to restore the system to full operation in accordance with contract specifications.

4.4.3 **Noise Level Test** - The Government Industrial Health and Safety Department shall conduct a noise level survey using a certified sound level-measuring instrument. The noise level test shall be measured 3 feet away from the machine with three measurements on each side and end of the equipment. Readings will be taken 1 foot off the ground and any point up to 8 feet off the ground. The vacuum shall have 25 feet of 5 inch vacuum recovery hose attached during the test. The vacuum noise shall be tested at free flow and 26 inches Hg. For each measurement, the microphone shall be located on a straight line which is perpendicular

SPECIFICATION FOR
20 TON ABRASIVE BLAST UNIT with STORAGE HOPPER

to the surface/corner being measured and at a height corresponding to the point of the highest noise level emitted from the surface/corner at the herein specified location or distance from the equipment. Each sample shall be 84 dB (A scale) or less and 92 dB (C scale) or less.

- 4.4.4 **Provisions for repair and test** - In the event of a test failure, the contractor, at their discretion, may elect to correct the failed condition and request a retest of the system.
- 4.4.5 **Final Acceptance** - Upon satisfactory completion of delivery, inspection, testing of the system, OSHA Approved Certification, and on-site training, the contractor shall utilize electronic invoicing. Invoices must be submitted using Wide Area Workflow (WAWF) - Receipt and Acceptance. The contractor shall self-register at the web site: <https://wawf.eb.mil>. Contractor training is available on the Internet at <https://wawftraining.eb.mil>. Additional support can be accessed by calling the NAVY WAWF Assistance Line: 1-800-559-WAWF (9293).

5. **ADDITIONAL REQUIREMENTS**

5.1 **GENERAL SECURITY REQUIREMENTS**

- 5.1.1 **Security Regulations** - The contractor shall comply with security regulations imposed by the installation Commander and/or agency occupying the space where the work/training is to be performed, which includes obtaining any necessary personnel security clearances and vehicle passes.

5.2 **ADMITTANCE TO THE WORK SITE**

- 5.2.1 **Access Badges (Controlled Industrial Area)** – Upon contract award, employees or representatives of the Contractor who require access to the Puget Sound Naval Shipyard Controlled Industrial Area (CIA) and shall be admitted to the work site only after they have been issued a Security Pass/ID Badge.

NOTICE: Persons who are currently on probation or parole from a felony conviction cannot qualify for a Security Pass/ID Badge and will be denied access to the Shipyard.

- 5.2.1.1 Contractor personnel requiring access badges for unescorted entry into the CIA will be required to provide personal background information to the extent necessary to obtain a Security Pass/ID Badge.
- 5.2.1.2 A request for Visitor Badge, PSNS Form 5512/127, completed by the sponsor (typically the Contracting Officer or the Receiving Activity Point of Contact) and submitted by the sponsor (Receiving Activity Point of Contact) to the Pass and I.D. Office, at least five (5) business days before the badges are needed.
- 5.2.1.3 The Government will issue badges without charge.
- 5.2.1.4 Contractors, their subcontractors and vendors requesting access to the CIA will be required to view an orientation videotape lasting approximately 30 minutes prior to receiving a badge.
- 5.2.1.5 Contractor shall allow approximately two (2) hours for each employee to acquire a badge.
- 5.2.1.6 Each employee shall visibly display/wear the Government issued badge chest high over the front of their outermost clothing.
- 5.2.1.7 It shall be the Contractor's responsibility to collect and account for all Security Pass/I.D. Badges issued to their personnel upon termination of any employee, expiration of the badge, completion of the contract, or when access is no longer required. Badges, passes and permits shall be returned to the Pass and I.D. Office immediately.

SPECIFICATION FOR
20 TON ABRASIVE BLAST UNIT with STORAGE HOPPER

5.2.2 **Required Documentation** - Contractors working within the CIA are required to be United States citizens and must show proof of citizenship prior to receiving a badge. Acceptable forms of proof are:

Original Birth Certificate

Original Department of State Birth Certificate

Certificate of Person Born Abroad

Original Naturalization Certificate

Valid United States Passport

NOTE: Proof of U.S. citizenship shall be hand carried by the employee to the Pass and I. D. Office located in Bldg. 981, when picking up the badge.

5.2.3 **Foreign Nationals or Affiliations** - Foreign Nationals (non U.S. Citizens) or persons affiliated with, or employed by, a foreign, or foreign owned company will not be granted access to Puget Sound Naval Shipyard CIA without prior written approval from Commander, Naval Sea Systems Command (NAVSEA).

5.2.3.1 The Government will provide a standard background information data form for obtaining NAVSEA approval of foreign nationals. This form can be obtained from the Contracting Officer or the Receiving Activity Point of Contact.

5.2.4 **Vehicle Passes**

5.2.4.1 Contractors will be allowed to bring company vehicles into the CIA based upon the nature of their work as determined by the Commanding Officer in conjunction with the Industrial Security Officer.

5.2.4.2 Forms for obtaining vehicle passes and permits may be obtained from the Receiving Activity Point of Contact.

5.2.4.3 Each contractor, subcontractor and vendor vehicle shall be registered with the Pass and I.D. Office located in Bldg. 981.

5.2.4.4 Contractors shall clearly display an authorized company sign or logo on their vehicle.

5.2.4.5 Contractor vehicles are not allowed to enter the CIA with more than three (3) people onboard.

5.2.4.6 After contract award, the Contracting Officer will issue a memorandum that lists the vehicles a contractor will be allowed to bring into the CIA.

5.2.4.7 Each permit will include the company name, license plate number and expiration date.

5.2.4.8 CIA permits will be issued to each authorized vehicle by license number.

5.2.4.9 Each contractor, subcontractor and vendor shall provide the state registration or a photocopy and proof of insurance documents of each approved vehicle to the Pass and I.D. Office where one of the following Vehicle Permits will be issued and the purpose for each type of permit.

SPECIFICATION FOR
20 TON ABRASIVE BLAST UNIT with STORAGE HOPPER

- 5.2.4.10 Lay-down Permit - A permit that authorizes the vehicle to be brought in to transport tools, parts, or materials to/from the site or function as a work platform. Vehicles with Lay-down permits are kept at the negotiated job site when not traveling to/from the gate.
- 5.2.4.11 Load/Unload Permit - A permit that authorizes the vehicle to be brought in to drop off tools, equipment and machinery (which cannot be hand carried) then is taken out of the CIA. Vehicles with Load/Unload Permits shall not be left unattended at the job site for more than 30 minutes.
- 5.2.4.12 Service Permit - A permit that authorizes the vehicle to be brought in and used as a mobile work platform because it contains tools, parts, materials, supplies and/or fabrication equipment. Vehicles with Service Permits allow the vehicle to be used at job sites throughout the CIA where no negotiated lay-down area exists.
- 5.3 **RESTRICTIONS**
- 5.3.1 **Parking**
- 5.3.1.1 Vehicles and equipment- Vehicles and equipment required by the Contractor to complete this contract must be registered with Shipyard Security.
- 5.3.1.2 Contractor vehicles must be marked on the outside with the company name or logo or both. Failure to comply will result in ticketing and/or loss of vehicle privileges.
- 5.3.2 **Regular Working Hours** - All work is to be performed during Puget Sound Naval Shipyard & Intermediate Maintenance Facility Bremerton Site's regular work hours from 7:30 a.m. to 4:00 p.m., Monday through Friday except for Federal Holidays.
- 5.3.3 **Restricted Colors** - This Shipyard uses the colors magenta, yellow, red and blue to identify specially controlled materials. The Contractor is specifically prohibited from using magenta, yellow, red or blue colored plastic wrapping materials or bags, tape, or other covering materials.
- 5.3.4 **Radio Restrictions** - Operation of privately owned citizens band or amateur radio equipment (receive and transmit) within the geographic limits of Puget Sound Naval Shipyard is prohibited. All radio equipment installed in privately owned motor vehicles must be turned off upon entering any gate to the Government Activity.
- 5.3.5 **Privately Owned Personal Computers And Cellular Telephones** - The use of privately owned personal computers and cellular telephones by contractor personnel at Puget Sound Naval Shipyard is restricted. Contractors requiring such devices in the performance of this contract shall obtain a copy of the applicable form(s) from the Contracting Officer. The completed applicable form(s) shall be returned and routed for Government approval. The use of cell phones are not permitted at anytime while driving anywhere within the Government Activity.
- 5.3.6 **Photography/Recording** - Contractor personnel are prohibited from having photographic equipment (including cell phones and watches capable of taking pictures), tape recorders, zip drives, personal electronic management devices, or other recording devices in their possession while inside the Government Controlled Industrial Area (CIA).

SPECIFICATION FOR
20 TON ABRASIVE BLAST UNIT with STORAGE HOPPER

- 5.3.7 **Sanitation** – Puget Sound Naval Shipyard & Intermediate Maintenance Facility (PSNS & IMF) prohibits its employees to consume food except in designated areas. Per the Code of Federal Regulations, 29 CFR 1910.141, Sanitation, employees may not eat or drink in regulated work areas or in other industrial work areas where toxic materials are present. Hardhats, gloves and any other regulated work clothing shall not be worn or placed in designated eating areas.
- 5.3.8 **Smoking** – Smoking is permitted in designated areas only.