

**Common Terms and Conditions Guide**  
**Section 4 – Additional General Provisions**

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**Additional General Provisions**

The following terms and conditions are in addition to the terms and conditions in GP2, The Boeing Company General Provisions (Fixed Price Services Contract), GP3, The Boeing Company General Provisions (Labor Hour/Time and Material Contract), or GP4, The Boeing Company General Provisions (Cost Reimbursement Contract Under Government Prime Contract). In some cases, they modify or supplement terms and conditions with the same or similar titles as in GP2, GP3, or GP4.

**1. INSPECTIONS**

Seller will keep records evidencing inspections and their results and will make these records available to Buyer and the Government, where applicable, during contract performance and for four years after final payment.

**2. BUYER'S USE OF DATA AND INFORMATION**

(This article applies only if this contract is issued under a Government prime contract or subcontract.)

Seller agrees that any data such as drawings, instructions, or information furnished to Buyer in connection with this contract will be free from confidential, proprietary, or restrictive-use markings, other than statutory patent, copyright, U.S. Government security notices, or properly applied restrictive legends permitted by appropriate FAR, Department of Defense FAR Supplement (DFARS), or NASA FAR Supplement clauses incorporated herein. Buyer, its agents, or its assignees may duplicate or use such documents in connection with the manufacture, use, or disposition of the material furnished under this contract and may remove, obliterate, or ignore any such marking as may be on such documents unless such markings are specifically permitted by applicable FAR, DFARS, or NASA FAR Supplement clauses. Except as may be otherwise provided in this contract, all information and data disclosed or furnished to Buyer in connection herewith will be deemed to be disclosed or furnished as part of the consideration for this contract, and Seller agrees not to assert any claims (except claims for patent infringement) by reason of any use, duplication, or disclosure thereof.

**3. PRECEDENCE**

All documents and provisions in this contract shall be read so as to be consistent to the extent practicable. In the event various parts of this contract are inconsistent, the following order of precedence shall apply: (i) special terms and conditions; (ii) those terms and conditions from the IDS Common Terms and Conditions Guide that are incorporated in this contract by reference, including customer contract requirements; (iii) specifications; (iv) all other attachments, exhibits, appendices, etc. incorporated by reference. Buyer's specifications will prevail over any subsidiary documents referenced therein. Seller will not use any specification in

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lieu of those contained in this contract without the written consent of Buyer's Authorized Procurement Representative.

**4. SUBCONTRACTING**

(This article applies only if this contract is a subcontract under a U.S. Government prime contract.)

- (A) If this is a labor hour/time and material contract,
  - (i) Seller agrees that no subcontract placed under this contract will provide for payment on a cost-plus-a-percentage-of-cost basis.
  - (ii) Seller will award all subcontracts in excess of \$2,500 on a competitive basis to the maximum extent possible. Suppliers' quotes, including quotes from unsuccessful bidders, will be made available to Buyer upon request and will be retained as supporting documentation in accordance with the requirements of the Records and Audit article of this contract.
- (B) If this is a cost reimbursement contract under a government prime contract, Seller agrees that no subcontract placed under this contract will provide for payment on a cost-plus-a-percentage-of-cost basis.

**5. RECORDS AND AUDIT**

(This article applies only if this is a cost-type contract.)

- (A) Until three years after final payment, Seller will maintain, and Buyer will have the right to examine and audit, books, records, documents, and accounting procedures and practices sufficient to reflect properly all direct and indirect costs of whatever nature claimed to have been incurred and anticipated to be incurred for the performance of this contract.
- (B) Before making each payment under this contract, Buyer may require Seller to submit vouchers, receipts, payroll information, and labor and material releases.

**6. SECURITY REQUIREMENTS FOR ACCESS TO PREMISES OWNED OR CONTROLLED BY BUYER OR THE GOVERNMENT**

(This article applies only if this contract requires Seller to work on facilities owned or controlled by Buyer or Buyer's customer.)

All employees, agents, and representatives of Seller or its subcontractors who are expected to enter premises owned or controlled by Buyer or the Government are required to provide Buyer's Security personnel with proof of citizenship. Examples of original documents that are considered satisfactory are U.S. Birth Certificates,

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U.S. Passports, Certificates of Naturalization, Alien Registration Receipt Card (with photograph), and/or other evidence of citizenship satisfactory to Buyer before being allowed access to Buyer's premises. All such employees, agents, and representatives are bound by the provisions of the United States Criminal Code relating to espionage and sabotage and will conform to the standards and requirements established by the Government and Buyer's Security. Seller will submit the name and birth certificate and/or other satisfactory evidence of citizenship of each such employee, agent, or representative prior to the time for reporting for work. Selected positions and assignments of Seller's employees may require a security clearance.

**7. SAFEGUARDS**

(This article applies only if this contract requires Seller to work on facilities owned or controlled by Buyer or Buyer's customer.)

If this contract requires work to be performed on property owned or controlled by Buyer or the Government, Seller will provide suitable and adequate protection of the work, property adjacent to the work, and persons in the immediate vicinity of the work.

**8. BADGING REQUIREMENTS FOR FOREIGN PERSONS**

(This article applies only if this contract requires Seller to work on facilities owned or controlled by Buyer or Buyer's customer.)

- (A) An employee of Seller who is not a U.S. citizen and does not have a permanent-resident-alien "green" card on his or her person may not be admitted to Buyer's or Buyer's customer's facilities for purposes of performing work without special arrangements.
- (B) If foreign persons are to be used for work at Buyer's or Buyer's customer's facilities, advance notice must be provided to Buyer's Authorized Procurement Representative at least three weeks prior to the scheduled need for access to Buyer's or Buyer's customer's facilities.
- (C) The following specific information must be provided for each such foreign national:
  - (i) Complete name and address of employee;
  - (ii) Company name and address;
  - (iii) Contract number;
  - (iv) Detailed description of employee's duties;

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- (v) Nationality;
  - (vi) Date and place of birth (country of origin);
  - (vii) Passport number and expiration date;
  - (viii) Employment authorization and/or work permit number issued by the Immigration and Naturalization Service;
  - (ix) Access requirements (i.e., facility locations, building numbers, controlled access areas, automated information systems, etc.), and
  - (x) Duration of need for access to Buyer's or Buyer's customer's facilities.
- (D) Buyer's Authorized Procurement Representative will make arrangements for appropriate badging for Seller's foreign national employees, or will notify Seller if unescorted access is denied or delayed.
- (E) Seller agrees that it will not employ for the performance of work at Buyer's or Buyer's customer's facilities any individuals who are not legally authorized to work in the United States.
- (F) Nothing in this clause shall be construed as requiring or encouraging violation of the labor laws of the United States, including without limitation, those pertaining to equal employment opportunity.

**9. INDEMNIFICATION, INSURANCE, AND PROTECTION OF PROPERTY**

(This article applies only if this contract incorporates GP4 and requires Seller to work at a Boeing site.)

- (A) Indemnification Negligence of Seller or Subcontractor. Seller shall indemnify and hold harmless The Boeing Company, its subsidiaries, and their directors, officers, employees and agents from and against all actions, causes of action, liabilities, claims, suits, judgments, liens, awards, and damages, of any kind and nature whatsoever for property damage, personal injury, or death (including without limitation injury to or death of employees of Seller or any subcontractor thereof) and expenses, costs of litigation and counsel fees related thereto or incident to establishing the right to indemnification, arising out of or in any way related to this contract, the performance thereof by Seller or any subcontractor thereof or other third parties, including, without limitation, the provision of services, personnel, facilities, equipment, support, supervision or review. The foregoing indemnity shall apply only to the extent of the negligence of Seller, any subcontractor thereof, or their respective employees. In no event shall Seller's obligations hereunder be limited to the extent of any insurance available to or provided by Seller or any subcontractor thereof. Seller expressly waives any immunity under industrial

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insurance, whether arising out of statute or source, to the extent of the indemnity set forth in this paragraph (A).

- (B) **Commercial General Liability.** If Seller or any subcontractor thereof will be performing work on Buyer's premises, Seller shall carry and maintain, and ensure that all subcontractors thereof carry and maintain, throughout the period when work is performed and until final acceptance by Buyer, Commercial General Liability insurance with available limits of not less than one million dollars (\$1,000,000) per occurrence for bodily injury and property damage combined. Such insurance shall contain coverage for all premises and operations, broad form property damage, contractual liability (including, without limitation, that specifically assumed under paragraph (A) herein) and goods and completed-operations insurance with limits of not less than one million dollars (\$1,000,000) per occurrence for a minimum of 24 months after final acceptance of the work by Buyer. Such insurance shall not be maintained on a per-project basis unless the respective Seller or subcontractor thereof does not have blanket coverage.
- (C) **Automobile Liability.** If licensed vehicles will be used in connection with the performance of the work, Seller shall carry and maintain, and ensure that any subcontractor thereof who uses a licensed vehicle in connection with the performance of the work carries and maintains, throughout the period when work is performed and until final acceptance by Buyer, Business Automobile Liability insurance covering all vehicles, whether owned, hired, rented, borrowed or otherwise, with available limits of not less than one million dollars (\$1,000,000) per occurrence combined single limit for bodily injury and property damage.
- (D) **Workers' Compensation.** Throughout the period when work is performed and until final acceptance by Buyer, Seller shall, and ensure that any subcontractor thereof shall, cover or maintain insurance in accordance with the applicable laws relating to Workers' Compensation with respect to all of their respective employees working on or about Buyer's premises. If Buyer is required by any applicable law to pay any Workers' Compensation premiums with respect to an employee of Seller or any subcontractor, Seller shall reimburse Buyer for such payment.
- (E) **Certificates of Insurance.** Prior to commencement of the work, Seller shall provide for Buyer's review and approval certificates of insurance reflecting full compliance with the requirements set forth in paragraphs (B) Commercial General Liability, (C) Automobile Liability, and (D) Workers' Compensation. Such certificates shall be kept current and in compliance throughout the period when work is being performed and until final acceptance by Buyer, and shall provide for 30 days advance written notice to Buyer in the event of cancellation. Failure of Seller or any subcontractor thereof to furnish Certificates of Insurance, or to procure and maintain the insurance required herein or failure of Buyer to request such certificates, endorsements or other

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proof of coverage shall not constitute a waiver of the respective Seller's or subcontractor's obligations hereunder.

- (F) Self-Assumption. Any self-insured retention, deductibles and exclusions in coverage in the policies required under this article shall be assumed by, for the account of and at the sole risk of Seller or the subcontractor which provides the insurance and to the extent applicable shall be paid by such Seller or subcontractor. In no event shall the liability of Seller or any subcontractor thereof be limited to the extent of any of the minimum limits of insurance required herein.
- (G) Protection of Property. Seller assumes, and shall ensure that all subcontractors thereof and their respective employees assume, the risk of loss or destruction of or damage to any property of such parties whether owned, hired, rented, borrowed, or otherwise. Seller waives, and shall ensure that any subcontractor thereof and their respective employees waive, all rights of recovery against Buyer, its subsidiaries and their respective directors, officers, employees and agents for any such loss or destruction of or damage to any property of Seller, any subcontractor or their respective employees.
- (H) At all times Seller shall, and ensure that any subcontractor thereof shall, use suitable precautions to prevent damage to Buyer's property. If any such property is damaged by the fault or negligence of Seller or any subcontractor thereof, Seller shall, at no cost to Buyer, promptly and equitably reimburse Buyer for such damage or repair or otherwise make good such property to Buyer's satisfaction. If Seller fails to do so, Buyer may do so and recover from Seller the cost thereof.

**10. ELECTRONIC SUBMITTAL OF QUALITY-RELATED DOCUMENTATION**

(This article applies only if Seller has access to the S&C Supplier Portal.)

Seller shall, prior to shipment and via the Supplier Portal, provide Buyer contract-required quality-related documentation for Buyer's review and acceptance.

**11. FINANCIAL DATA**

(This article applies only if this contract exceeds \$250,000 and has a period of performance of more than one year.)

If requested, Seller shall provide financial data, on a quarterly basis, or as requested to the Boeing Corporate Credit Office for credit and financial condition reviews. Said data shall include but not be limited to Balance Sheets, schedules of accounts payable and receivable, major lines of credit, creditors, Statements of Income (profit and loss), Statements of Cash Flow, firm backlog, and headcount. Copies of such data are to be made available within 72 hours of any written

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request by Boeing's Corporate Credit Office. All such information shall be treated as confidential.

**12. PATENT RIGHTS, COPYRIGHTS, AND NONDISCLOSURE**

(This article applies only if this contract is for contract labor.)

- (A) **Definitions.** As used in this contract the term "invention" or "invention or discovery" includes any art, machine, manufacture, design, composition of matter, or any new and useful improvement thereof which is or may be patentable under the Patent Laws of the United States or of any foreign country; and "made," when used in relation to any invention or discovery, shall mean the conception or the first actual or constructive reduction to practice of such invention.
- (B) **Disclosure.** Whenever an invention or discovery is made by Seller or any of its employees either solely or in collaboration with others, including employees of Buyer, under or relating to this contract, Seller will give Buyer prompt written notice thereof and will furnish Buyer with complete information thereon, including, as a minimum, a complete written disclosure of each such invention and information concerning the date and identity of any public use, sale, or publication of such invention made by or known to Seller or of any contemplated publication by Seller or its employees.
- (C) **Rights in Inventions.** Rights in any inventions or discoveries made by Seller or its employees under this contract, including title to and rights under any patent application or patent which may issue thereon, will reside solely with Buyer, together with the exclusive power to determine whether or not and where a patent application will be filed and disposition of any rights thereunder. Seller agrees that it will, and warrants that its employees who may be the inventors of any such invention will, execute all documents and do all things necessary or proper to vest in Buyer the rights granted to it under this clause and to enable Buyer to apply for and prosecute any patent application, in any country, covering such invention, where Buyer has the right under this clause to file such application.
- (D) **Background Patents.** Seller agrees to grant to Buyer a nonexclusive, royalty-free license under any patents owned or controlled by Seller which relate to and are required by Buyer to practice any of the work or the results of the work of Seller or its employees under this contract.
- (E) **Nondisclosure.** Seller agrees it will not, and warrants that its employees will not, disclose to any third party, without the written consent of Buyer, any invention or discovery made under or relating to this contract or any information acquired from Buyer under this contract, including trade secrets, business plans, and confidential or other information which may be proprietary to Buyer.

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- (F) Employee Agreements. Seller will obtain patent agreements to effectuate the provisions of this clause from all persons who perform any part of the work under this contract, except such clerical and manual labor personnel as will have no access to technical data.
- (G) Copyrights. Seller agrees to assign to Buyer the copyrights on any works of authorship prepared under this contract and to cause its employees to do the same to the extent that the works of such employees are not considered to be works made for hire for Buyer or Seller under copyright law.

**13. ETHICAL BUSINESS CONDUCT**

(This article applies only if this contract requires Seller's employees to work on Buyer's premises for extended periods of time.)

Seller will ensure that its employees performing under this contract comply with Boeing's Ethical Business Conduct Guidelines. The Guidelines are available at the following Internet address:

<http://www.boeing.com/companyoffices/aboutus/ethics/index.htm>

A hardcopy of the Guidelines will be provided upon request.

**14. FOREIGN SUPPLIER REPORTING**

(This article applies only if this contract exceeds \$500,000 and Seller is a domestic supplier.)

In accordance with the Offset Credits article of Buyer's General Provisions, Seller shall:

- (A) Immediately notify Buyer's Authorized Procurement Representative of potential foreign procurements where a request for quotation has been issued to a foreign supplier or a proposal has been received from a foreign supplier.
- (B) Submit a quarterly report identifying awards and pending awards to foreign suppliers.
- (C) Include the following information for each award and pending award in the quarterly report:
  - (i) Buyer's purchase contract number and a point of contact within Seller's company (name and telephone number);
  - (ii) Name of foreign company;



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- (iii) Address of foreign company;
- (iv) Foreign company point of contact (name, telephone, and FAX number);
- (v) Part number(s) or description of product(s) and service(s) to be provided;
- (vi) Seller's order number;
- (vii) Anticipated award date (upon receipt of offer or issuance of solicitation to foreign firm);
- (viii) Estimated U.S. dollar value for pending awards;
- (ix) Date of award (if a contract change, indicate change number, and date change was issued);
- (x) Actual U.S. dollar value for awarded contracts;
- (xi) Quantity and unit of measure, and
- (xii) Comments, if any.

(D) Negative reports are not required.

15. ITAR Registration Requirements

Seller shall comply with International Traffic in Arms Regulation §122.1, Registration requirements.

16. Export Control Requirements

(This clause applies only if Buyer furnishes data to Seller.)

Seller agrees to comply fully with all applicable U.S. laws and regulations as they may apply to the export of any hardware, software, defense service, or technical data (collectively "Data") provided by, through or with the cooperation of Seller in the performance of this subcontract in the U.S. or abroad or under any export license or exemption issued to Buyer. Seller agrees that it will not permit the re-export of Data, including to foreign persons, employed by or associated with, or under contract to Seller or Seller's lower-tier suppliers, without the prior written consent of Buyer and under authority of an export license or applicable license exemption.

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**THE FOLLOWING CLAUSES APPLY ONLY TO KENNEDY SPACE CENTER TO THE EXTENT NOTED ON THE PURCHASE ORDER**

**EN.1. GENERAL COMPLIANCE REQUIREMENTS**

The subcontractor shall perform work and conduct operations such that personnel and the quality of the environment is protected and be knowledgeable of and shall comply with Federal, State, and Local worker protection, environmental regulations and KSC requirements. The subcontractor shall be responsible for personnel safety and the environmental effect of all work being performed under this Subcontract. The subcontractor shall enforce disciplinary actions for worker protection and environmental violations and shall provide written proof to the subcontract administrator that disciplinary action has been taken for such violations.

The subcontractor shall be responsible for the work being performed under this contract. BOEING reserves the right to verify satisfactory compliance with Federal, State, and Local worker protection, environmental regulations and KSC safety, environmental, and industrial hygiene requirements, inspect all work areas under this subcontract at the subcontractor's facility, at KSC, CCAS, or off base BOEING owned/leased facilities and to take photographs deemed appropriate during the inspection process.

**EN.2. ENVIRONMENTAL QUALITY**

The subcontractor shall institute and administer a program to protect environmental quality through pollution control. The subcontractor may be required to prepare an Environmental Quality Plan or an Environmental Quality Statement based on the scope, type, and duration of work to be performed. The plan may be provided as an appendix to the Safety Plan and as a minimum shall include the following:

Responsibility for environmental compliance of key personnel for the subcontractor and all on-site lower-tier subcontractors.

Methods to enforce environmental requirements.

Listing of key personnel to be contacted in time of emergency.

Procedures for waste management and disposal if applicable to contract work.

Procedures and environmental controls for abrasive blasting and spray-painting if applicable to contract work.

Procedures for pollution control and handling of hazardous material spills if applicable to contract work.

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Procedures for minimizing dust generated as a result of construction activities if applicable to contract work.

Procedures for emergency actions to be taken to secure all potentially dangerous conditions to protect personnel, limit environmental damage, and secure work areas in the event of an accident or an act of nature.

#### EN.3. TRAINING

The subcontractor shall insure that each employee is instructed in the recognition and avoidance of conditions that may lead to environmental degradation and instructed in the environmental regulations applicable to his work.

The subcontractor shall meet all OSHA required training and certification requirements. If applicable to contract work, the subcontractor shall provide formal written verification to the subcontract administrator that each employee has met OSHA training and certification requirements. Work will not be permitted to commence until such verification is received by BOEING Safety, Health and Environmental Affairs (SHEA).

#### EN.4. HAZARD COMMUNICATION

The subcontractor shall:

Review and retain KSC Form 31-309, Notification to Sub-Contractor of PGOC-KSC's Compliance with the Federal Hazard Communication Standard 29 CFR 1926.59 and 29 CFR 1910.1200.

Complete KSC Form 31-273, Subcontractor Notification to PGOC-KSC of Compliance with the Federal Hazard Communication Standard 29 CFR 1926.59 and 29 CFR 1910.1200 and submit it to the PGOC Subcontract Administrator.

#### EN.5. EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW

The Emergency Planning and Community Right-to-Know Act, which is Title III of the Superfund Amendments and Reauthorization Act of 1986, was enacted to require persons to report the amount and location of hazardous chemicals produced, stored, used, or released to the environment each year. Therefore, the subcontractor must complete and return to the subcontract administrator after the work has been completed, The Boeing Subcontractor/Payload Customer EPCRA Reporting Log for each chemical commodity brought on-site.

#### EN.6. POLLUTION CONTROL AND HAZARDOUS MATERIAL SPILLS

All Federal, State, Interstate, and Local pollution control regulations apply at Kennedy Space Center. The subcontractor shall comply with all applicable pollution control regulations regarding construction operations and with KDP-KSC-P-1298, Hazardous Materials Emergency. The subcontractor shall immediately report (by phone) any

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pollution incident or waste spill to the subcontract administrator or Activation & Modification Services (AMS) representative. The Subcontractor shall assist Boeing Safety, Health and Environmental Affairs (SHEA) personnel in the preparation of KSC Form 21-555, KSC Pollution Incident Report.

**EN.7. ENVIRONMENTAL PERMITS**

All environmental permits and notices required by Federal, State, and Local agencies must be coordinated with the subcontract administrator and must be in place prior to initiating contract activity. Permit approval may take up to six months.

**EN.8. TURBIDITY AND EROSION CONTROL**

The subcontractor shall prevent the discharge of sediment into drainage ditches, canals, streams, rivers, or lakes due to construction operations. Approved erosion control devices shall be installed to prevent discharge of sediment into any dry or wet watercourse. Erosion control shall consist of anchored hay bales, mulch and netting, filter cloth barriers, or other erosion control methods approved by the subcontract administrator. Stockpiled fill material shall not be stored in a manner which allows runoff into any watercourse.

The subcontractor shall not begin work in any watercourse without an approved Florida permit obtained from the subcontract administrator. The subcontractor shall comply with the turbidity control requirement of the Florida permit which at a minimum will include turbidity curtains. The subcontractor shall prevent increases in turbidity in excess of water quality standards for the receiving water class unless increases in turbidity are specifically allowed by the Florida permit. Should the subcontractors activities cause an increase of turbidity above the allowed standard, the subcontractor shall cease all contributory construction activity and install additional turbidity control measures.

**EN.9. CONSTRUCTION DEWATERING**

All contractors performing any construction dewatering at Kennedy Space Center must provide verification of Noticed General Permit or operate under the rules of Kennedy space Center's Noticed General Permit for Consumptive Uses. Effluent retained on site must be returned to its parent aquifer through overland sheet flow or temporary bermed infiltration areas. When effluent cannot be retained on site due to space restrictions, the subcontractor shall prepare either an Individual Consumptive Use Permit application or a RDS-50 form, depending on the project. An Individual consumptive Use Permit from St. Johns River Water Management District (SJRWMD) is required for projects exceeding four million gallons daily flow and/or one million gallons average flow, and/or which surpasses 180 days, unless all effluent is retained on site. The individual Consumptive Use Permit must be submitted to the subcontract administrator at least 90 calendar days prior to the planned start of dewatering activities. Form RDS-50 is required for projects exceeding three hundred thousand gallons per day but not surpassing four million gallons per day, and/or which continue more than 30 days but less than 180 days, unless all effluent is retained on site. Form RDS-50 requires all pumps to be tagged or

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labeled with the permit number. Form RDS-50 must be submitted to the subcontract administrator no less than 21 calendar days prior to the planned start date of dewatering activities for forwarding to SJRWMD. Dewatering activities may not take place until the permit applications are approved by SJRWMD and returned to the subcontractor. The subcontractor shall comply with all conditions of the permits.

**EN.10. MANAGEMENT OF KSC BORROW AREAS**

The subcontractor may use the Kennedy Space Center borrow area to obtain fill for this contract, after NASA DE approval has been obtained through the BOEING AMS Integration Engineer.

The pit shall be excavated to at least fifteen feet. Permanent banks shall be established along the perimeter of the site at a slope no greater than one foot of rise to four feet of run from at least two feet below the water line. The banks shall be bermed to at least two feet above the existing adjacent soil level. Soil and overburden from the borrow area and the contract site unsuitable for construction backfill shall be used to establish the slope. Any highly organic soils from the borrow area or the contract site shall be used to top dress the permanent banks. Temporary banks along edges of the pit being worked shall be nearly vertical. The area may be worked in cells to facilitate dewatering provided that the earthen dikes between cell are fully removed after each cell is complete. The previously excavated cells may be used as a retention area to prevent off-site discharge of dewatering effluent.

**EN.11. ABRASIVE BLASTING AND SPRAY PAINTING**

Abrasive blasting and spray painting will be, wherever possible, performed prior to delivery of materials to Kennedy Space Center. Where field operations on KSC are necessary or required by the specifications the subcontractor shall perform the operations with the following environmental controls.

Blasting media must be silica free.

For spray-painting operations, a Material Safety Data Sheet (MSDS). The Boeing Subcontractor/Payload Customer EPCRA Reporting Log and a KSC Form 26-551 Process Waste Questionnaire for each paint to be used shall be submitted to the subcontract administrator in accordance with KHB 8800.7, Hazardous Waste Management. For abrasive blasting operations on existing KSC structures, the subcontract administrator will provide the subcontractor with a laboratory analysis of the existing paint to be removed. This shall be returned to the subcontract administrator with a completed KSC Form 26-551. For abrasive blasting operations on painted structures supplied by the subcontractor, the subcontractor shall submit a MSDS of each paint on the structure with a completed KSC Form 26-551. The subcontractor shall allow ample time for processing the KSC 26-551 prior to starting the operation. If the material to be blasted is deemed hazardous all debris must be contained to prevent release to the environment (e.g. tents, screens, vacuum blasting).

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A temporary impervious surface, such as a waterproof drop cloth, shall be installed beneath the structure or object to collect the abrasive blasting debris and the paint overspray. Weather conditions shall be closely monitored and during strong winds operations shall be ceased. The debris and overspray shall be collected daily and sampled, stored, and disposed of in accordance with Article 14. A laboratory analysis of the blast debris will be required to determine if the level of contamination warrants disposal as a hazardous or controlled waste. The subcontractor shall request the laboratory analysis through the subcontract administrator prior to disposal.

**EN.12. CONSTRUCTION DEBRIS AND SALVAGEABLE MATERIALS**

Construction debris shall be removed from KSC and disposed of according to current State and Local regulations unless otherwise approved by the subcontract administrator. When allowed by the subcontract administrator, under the Deviation/Waiver clause of this contract, and under conditions set by the U.S. Forestry Service, non-toxic, non-hazardous, combustible debris such as cleared trees, shrubs, roots, and scrap lumber may be burned on KSC property. Plastic, rubber, and any other material which may create toxic or noxious fumes when burned shall be treated as non combustible debris.

At the option of the subcontractor, non combustible, nonmetallic debris such as unsuitable soils and scrap concrete shall be either removed from KSC and disposed of in accordance with current State and Local regulations or removed to and unloaded at a location on KSC designated by the subcontract administrator.

Metals, and any material designated in the contract to be salvaged, will be segregated, protected, itemized, delivered, and off-loaded at a salvage area on KSC designated by the subcontract administrator.

**EN.13. OFFICE TRASH**

When the subcontractor maintains an office trailer on KSC, it is recommended that the subcontractor participate in the KSC office paper recycling program. Non-confidential white office paper can be segregated and delivered to a consolidated site on KSC. The subcontractor shall remove other non-hazardous office wastes from KSC and dispose of them in accordance with State and local regulations. Office materials such as copy machine or blueprint machine chemicals shall be evaluated and disposed of per Article 14.

**EN.14. HAZARDOUS AND CONTROLLED WASTE**

Hazardous and controlled waste shall be identified, accumulated, and disposed of in accordance with procedures in KHB 8800.7, Hazardous Waste Management and as follows:

The subcontractor shall identify all expected wastes and waste volumes by process including but not limited to all chemicals, paint products, and solvents, their containers

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and applicators by completing a "Process Waste Questionnaire" (PWQ), KSC Form 26-551. The subcontractor shall submit the PWQ prior to the start of waste generation.

Personnel who, in any manner, handle or come in contact with hazardous/controlled waste or who provide written/verbal direction which results in the generation of hazardous/controlled waste must successfully complete a training program.

The subcontractor shall ensure integrity of wastes generated on site and shall request pickup and disposal through AMS.

No unknown substances shall be delivered to KSC. The subcontractor shall provide a MSDS for every substance required by OSHA.

The following is a partial list of the types of hazardous and controlled wastes typically are generated during construction projects. Hazardous wastes are defined and listed in detail in the Resource Conservation and Recovery Act of 1976, Title 40 CFR.

**Examples of Hazardous and Controlled Wastes**

Abrasive blast debris mixed with paint particulate

Empty or partially empty paint cans

Empty or partially empty aerosol containers of any type

Used oils

Solidified RTV, Cans, and Applicators

Wastewater containing ethylene glycol, alcohol, Freon 113, chlorine etc.

Spent detergent solutions

Empty cans, filters, rags, and absorbent containing petroleum products residues

Materials containing asbestos

Diesel fuel and gasoline contaminated with dirt or water

Lighting ballast's

Waste solvents and mixtures, wipes, rags, and applicators used with solvents (alcohol, Freon, MEK, acetone, trichloroethane, etc.)

Welding and soldering fluxes

Electrolytes

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Acids, corrosives, etchants, and associated equipment and debris

Paint stripper

Paint solids (overspray, chips, rollers, brushes, masking material, etc.)

Paint and primer liquids and clean-up thinners

Unused/defective catalyst

Uncured or improperly mixed sealants and adhesives

Fluorescent and mercury vapor lamps

**EN.15. CLEANING OPERATIONS GENERATING INDUSTRIAL WASTEWATER**

The Florida Department of Environmental Regulation has identified cleaning operations as a process with the potential for generation of industrial wastewater. The criteria which should be utilized when determining if industrial wastewater is being generated is; if any chemicals are added to the process during cleaning, if during the cleaning process there is the potential that a chemical will be picked up in the wash water, or if there is the potential that metals may leach from piping systems (i.e., copper) then an industrial wastewater is generated. Cleaning and water blasting operations include, but are not limited to, vehicle wash downs, steam cleaning operations, and water blasting facilities with potential for generation of paint chips and debris. It should be noted that chemicals include petroleum, oils, and lubricants. Industrial wastewater cannot be discharged without permission from appropriate regulatory authorities and unauthorized discharge of industrial wastewater can result in civil or criminal penalties. All water-based cleaning operations and other industrial wastewater generating processes must be coordinated with the subcontract administrator and disposed of in accordance with Article 14.

**EN.16. ASBESTOS CONTAINING MATERIALS**

Materials identified in the list below shall be Presumed Asbestos Containing Material (PACM) unless notification is provided otherwise. These materials are present in various quantities throughout Kennedy Space Center (KSC) and Cape Canaveral Air Station (CCAS), with the exception of the Space Station Processing Facility. Prior to performing any work that contains PACM and/or disturbs PACM, the subcontractor shall notify BOEING of the location and quantity of asbestos containing material (ACM) or presumed asbestos containing material (PACM) present in the area and the precautions to be taken to ensure that airborne asbestos is confined to the area. The preferred provider of asbestos survey information is the Joint Base Operations Support Contractor (JBOSC) Environmental Health Office. Use of alternate asbestos survey providers shall be authorized in writing by the subcontract administrator prior to the scheduled contract start date.



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All personnel, equipment, procedures and work practices involving ACM and PACM are subject to approval of the Joint Base Operations Support Contractor (JBOSC) Environmental Health Office, the NASA Biomedical Office, and BOEING Safety, Health and Environmental Affairs (SHEA).

All asbestos waste shall be double bagged or double wrapped in 6-mil polyethylene. Any material which might tear the bags should be placed in fiber drums or barrels. All asbestos waste containers shall be labeled in accordance with OSHA, DOT, and NESHAPS and state regulations. All asbestos waste shall be placed in an enclosed or covered vehicle and transported to a landfill approved for asbestos waste. The enclosed area of the transport vehicle shall be lined with polyethylene sheeting to prevent cross-contamination of the transport vehicle in the event of a leak or spilled containers. All workers designated to perform operations in any area where PAMC or ACM is located must be trained to the proper asbestos work classification, fit-tested on the assigned respirator, and medically qualified to wear the assigned respiratory protection prior to the start of the contract. Workers loading or unloading the asbestos waste shall be protected with disposable clothing and respiratory protection. Within 20 days after completion of work, the subcontractor shall submit to the subcontract administrator, a copy of the shipping /waste manifest, chain of custody document, a disposal receipt from the landfill, and the landfills disposal permit.

Sample List of Suspect Asbestos-Containing Materials (this list is not all inclusive)

- Cement Pipes
- Cement Wallboard
- Cement Siding
- Asphalt Floor Tile
- Vinyl Floor Tile
- Vinyl Sheet Flooring
- Flooring Backing
- Construction Mastics (floor tile, carpet, ceiling tile, etc.)
- Acoustical Plaster
- Decorative Plaster
- Textured Paints/Coatings
- Ceiling Tiles and Lay-in Panels
- Spray-Applied Insulation
- Blown-in Insulation
- Fireproofing Material
- Taping Compounds (thermal)
- Packing Materials (for wall/floor penetrations)
- High Temperature Gaskets
- Laboratory Hoods/Table Tops
- Laboratory Gloves
- Fire Blankets
- Fire Curtains
- Elevator Equipment Panels
- Elevator Brake Shoes

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HVAC Dust Insulation  
Boiler Insulation  
Breeching Insulation  
Ductwork Flexible Fabric Connection  
Cooling Towers  
Pipe Insulation (corrugated air-cell, block, etc.)  
Heating and Electrical Ducts  
Electrical Panel Partitions  
Electrical Cloth  
Electric Wiring Insulation  
Chalkboard  
Roofing Shingles  
Roofing Felt  
Base Flashing  
Thermal Paper Products  
Fire Doors  
Caulking/Putties  
Adhesives  
Wallboard  
Joint Compounds  
Vinyl Wall Coverings  
Spackling Compounds

**EN.17. RECOVERY OF CHLOROFLUROCARBONS AND HALON**

Work on any system containing chlorofluorocarbons (CFCs or HCFCs) or Halon shall be conducted to prevent any discharge to the atmosphere. All such materials shall be recovered in refillable containers. The method of recovery and refillable containers shall conform to the American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE) Guidelines 3-1990 and the requirements of 40 CFR Part 82 and 62-281 Florida Administrative Code. The containers shall be labeled and turned over to the subcontract administrator.

**EN.18. POTABLE WATER LINE TAPPING AND DISINFECTION**

The tapping and disinfection of all potable water lines shall be monitored by the Joint Base Operations Support Contractor (JBOSC) Environmental Sanitation/Pollution Control office in accordance with KHB 1870.1A, Environmental Sanitation Handbook.

**EN.19. RESPIRATORY PROTECTION**

Unless approved by BOEING Safety, Health and Environmental Affairs (SHEA), respiratory protection equipment, when required, shall be provided by the subcontractor. When respiratory protection is required, the subcontractor shall submit verification of compliance with 29 CFR 1910.134 regarding training, fit-testing and implementation of a written respiratory protection program. The subcontractor shall be responsible for respiratory selection, use and exposure monitoring. The Joint Base Operations Support

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Contractor (JBOSC) Environmental Health Office may perform or audit exposure monitoring at their discretion.

**EN.20. WORKER PROTECTION**

The subcontractor is responsible for identification, evaluation, and control of hazards associated with the use, disturbance, or exposure of personnel to hazardous and toxic materials. The subcontractor shall comply with personal protective equipment requirements as established by the subcontractor in accordance with applicable regulations and material safety data sheets. Personal protective equipment is defined as "devices worn by the worker to protect against hazards in the environment". Personal protective equipment includes but is not limited to: respirators, gloves, hearing and eye protection, hard hats, safety shoes. The subcontractor shall ensure that personal protective equipment is available for use by employees and shall ensure its use when required. Subcontractor shall comply with industry standards related to employee training, disposition, use, cleaning and maintenance of personal protective equipment.

**EN.21. CONFINED SPACE ENTRY**

Permit and non-permit confined spaces (per 29 CFR 1910.46) are present throughout all KSC and CCAS facilities. Not all confined spaces are posted. The subcontractor shall not enter any confined space without previous coordinating with BOEING Safety, Health and Environmental Affairs (SHEA). The subcontractor shall determine if confined space entry is required to complete the work and utilize alternatives to entering confined spaces whenever feasible. The subcontractor shall submit a list of known or suspected confined spaces that must be entered to BOEING Safety, Health and Environmental Affairs (SHEA) for evaluation through the BOEING Subcontract Administrator (SCA). BOEING Safety, Health and Environmental Affairs (SHEA), through the BOEING SCA, will then provide written notification to the subcontractor regarding the hazards to be expected in each confined space and the procedures BOEING would utilize for entry. After receipt of the written notice, the subcontractor shall inform BOEING Environmental Services, through the BOEING SCA, of the specific procedures to be followed for each entry. Procedures must comply with 29 CFR and KHB 1840.1, KSC Industrial Hygiene Handbook, Appendix A, Confined Spaces..

The subcontractor shall identify trained entrants, attendants, and entry supervisors for confined space operations. The entry supervisor shall sign the entry permitted and supervise entry in accordance with Occupational Safety & Health Administration (OSHA) 29 Code of Federal Regulations (CFR) 1910.146.

**EN.22. RADIATION PROTECTION**

The use of all ionizing and non-ionizing radiation sources requires the approval of the NASA/KSC Biomedical office and BOEING -KSC Area Radiation Officer prior to being brought on-site. The subcontractor shall ensure that all radiation sources located or used at the worksite are certified and authorized for use by the NASA/KSC Biomedical office in accordance with KSC regulations. Radiation source Use Authorizations must

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be processed by BOC Health Physics through the subcontract administrator. Ionizing sources include, but are not limited to, smoke detectors, static meters, and static eliminators. Non-ionizing sources include, but are not limited to, lasers, radio frequency radiation, and microwave radiation. Notification to BOEING -KSC Area Radiation Officer is required upon arrival and removal of radiation sources from KSC/CCAS properties.

**EN.23. LEAD OR CADMIUM CONTAINING MATERIALS**

Disturbance of suspect or confirmed lead or cadmium containing materials must be coordinated with BOEING Safety, Health and Environmental Affairs (SHEA) through the subcontract administrator. Subcontract activity which will result in the disturbance of lead or cadmium containing materials will require the subcontractor to:

Provide a Project Compliance Plan.

Identify the designated subcontractor Competent Person in the above required Project Compliance Plan and provide credentials/certifications pertinent to this level of responsibility.

Coordinate air monitoring procedures intended for exposure assessment/initial determinations as described in OSHA 29 CFR 1926.62.

Perform initial determinations for the project as described in OSHA 29 CFR 1926.62.

Submit copies of exposure assessment/initial determinations and daily logs, when required, to the subcontract administrator upon the completion of the project.

Implement an interim protection program for specific tasks described in OSHA 29 CFR 1926.62 paragraphs (d)(2)(i), (d)(2)(ii), (d)(2)(iii), and (d)(2)(iv). The program shall be in accordance with OSHA 29 CFR 1926.62 which includes adequate respiratory protection and personal protective equipment, biological monitoring, training, and provision for hand washing and change areas.

Provide written physician statement for biological monitoring results for effected personnel. Subject monitoring is to be administered within 30 days prior to the start date of the project and upon completion of the project. NOTE: BOEING reserves the right to require additional physicals throughout the completion of the project as deemed necessary

**EN.24. GENERAL SAFETY REQUIREMENTS**

In accordance with 29 CFR 1926/29 CFR 1910 applications, all subcontractors and lower-tier subcontractors shall ensure the following:

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The subcontractor and lower-tier subcontractors shall not require any employee to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to health or safety.

The subcontractor and lower-tier subcontractors shall insure that each employee is instructed in the recognition and avoidance of unsafe conditions and instructed in the regulations applicable to his work environment to control or eliminate any hazards or other exposure to illness or injury. In addition, the subcontractor shall comply with any specific regulations that apply to work in dangerous or potentially dangerous areas.

The subcontractor shall insure that a safety bulletin board is erected in the worksite in a conspicuous place upon which OSHA notices to employees shall be posted. The subcontractor shall take steps to insure that these notices are not altered, defaced, or covered by other material. All other notices, plans, etc. as required by Federal, State, and applicable

The subcontractor shall be required to have a Safety and Health Plan, as required by KHB 1710.2C, KSC Safety Practices Handbook and those OSHA mandated plans and programs as required by Federal and/or State laws/statutes. All programs and plans shall be subject to BOEING Safety, Health and Environmental Affairs (SHEA) receipt and/or review prior to commencement of work.

The subcontractor shall enforce disciplinary actions for safety and health violations and shall provide written proof to the BOEING Subcontract Administrator within five (5) working days that disciplinary action has been taken for such violations.

The subcontractor shall insure that prior to first and subsequent use of all equipment, machines, materials, etc. are in safe working condition, all guards are in place, and shall provide applicable documentation to that effect.

The BOEING prime subcontractor and lower-tier subcontractors shall insure their personnel are trained in accordance with the requirements of 29 CFR 1926/29 CFR 1910 applications.

**EN.25. SAFETY AND HEALTH PROGRAM**

All BOEING subcontractors shall institute and conduct a Safety and Health Program. The subcontractors, in accordance with KHB 1710.2C, shall submit a Safety and Health Plan through the subcontract administrator to BOEING Safety, Health and Environmental Affairs (SHEA) for receipt and/or review. Subcontractors are also required to have those OSHA mandated plans and programs as required by Federal and/or State laws and statutes. All programs and plans shall be subject to BOEING Safety, Health and Environmental Affairs (SHEA) receipt and/or review prior to commencement of work.

Each Lower-Tier subcontractor shall be required to submit their own Safety and Health Plan through the subcontract administrator to BOEING Safety, Health and

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Environmental Affairs (SHEA). Lower-Tier subcontractors may opt to submit, in writing, a statement that they fully understand and shall comply with the BOEING prime subcontractor's Safety and Health Plan to include those OSHA/EPA mandated plans and programs as required by Federal and/or State laws and statutes.

BOEING Safety, Health and Environmental Affairs (SHEA) will, at their discretion, request the BOEING subcontract administrator to submit a Certificate of Compliance to the subcontractor. The Certificate of Compliance provides a synopsis of Federal, State, Local, and NASA-KSC laws, statutes, and regulations with which the subcontractor must comply. The completed Certificate of Compliance, when submitted, is considered in lieu of receipt of a Safety and Health Plan. It shall be submitted to the BOEING subcontract administrator and no work for BOEING on KSC or CCAS shall commence until the Subcontract Administrator has received this document.

As a minimum, the Safety and Health Plan shall include the following:

Safety program objectives.

Methods of attaining safety objectives.

Responsibility of key personnel for the subcontractor and all on-site and lower-tier subcontractors.

Safety meetings, surveys, inspections, and reports.

Fire protection and prevention.

Enforcement of lockout and tagout procedures.

Enforcement of respiratory protection, radiation protection, hearing conservation, confined space entry procedures, and hazard communication requirements.

Procedures for disaster and emergency programs.

Listing of key personnel to be contacted in times of emergency.

Procedures for emergencies that occur as a result of work that is being performed under this Subcontract.

Procedures for emergency actions to be taken to secure all potentially dangerous conditions to protect personnel and secure work areas in the event of an accident or an act of nature.

The manner by which the subcontractor intends to comply with Federal OSHA Safety and Health Standards OSHA 29 CFR 1926 and OSHA 29 CFR 1910 and the various other requirements including KSC requirements detailed in KHB 1710.2C.

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Immediate reporting of accidents to the BOEING Safety, Health and Environmental Affairs (SHEA) and the Subcontract Administrator. BOEING Safety, Health and Environmental Affairs (SHEA) will notify NASA Safety.

Procedures for immediately securing the scene of accident/mishap site so that the area remains undisturbed until the arrival of a safety investigator. The accident/mishap site will remain secured until released by the BOEING Subcontract Administrator.

Statement (required by KHB 1710.2C) that the subcontractor will not invalidate the integrity of safety systems/devices without proper notification and/or authorization to/from AMS and BOEING Safety, Health and Environmental Affairs (SHEA).

**EN.26. SUBCONTRACTOR SAFETY REPRESENTATIVES**

Each subcontractor safety representative shall have the following responsibilities:

Insure 100% compliance with Federal, State, and KSC safety and health laws, regulations, and standards.

Remain on site during the work activities of the Subcontract to insure compliance with safety and health laws, regulations, and standards.

Conduct subcontractor safety meetings and attend BOEING progress meetings.

Immediately respond to on-site mishaps, secure the scene, and assist BOEING Safety, Health and Environmental Affairs (SHEA) and NASA Safety representatives at the scene of such mishaps. Insure that mishap reports are adequately and thoroughly completed.

Enforce disciplinary action for any violation of safety and health regulations.

**Alternate Safety Representatives**

The subcontractor shall have one Alternate Safety Representative for each subcontractor Safety Representative. The Alternate Safety Representative will assume the role and responsibilities of the subcontractor Safety Representative during the absence of the subcontractor Safety Representative.

The Alternate Safety Representative may be an individual with other duties to perform under this Subcontract. The Alternate Safety Representative shall be assigned from the subcontractor's management staff.

**EN.27. STOP WORK**

The subcontractor shall immediately stop work in order to correct or abate an unsafe condition or when required or requested to do so by BOEING Safety, Health and Environmental Affairs (SHEA) or NASA Safety in order to secure the scene of an

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accident. The subcontractor safety representative shall assist NASA and BOEING Safety and Environmental at the scene.

**EN.28. PERMANENTLY INSTALLED SAFETY SYSTEMS**

The subcontractor shall protect and in no way invalidate the integrity of any installed safety systems or personnel safety devices such as: fire-fighting equipment and sensing devices, fire alarm centers, fire water supply, guard rails, safety chains, warning lights, machine guards, and safety signs.

In the event that the subcontractor requires entry into safety systems or systems servicing safety devices, the subcontractor shall obtain prior to approval from the Subcontracts Administrator. In the event the subcontractor determines that it is necessary to temporarily remove or invalidate any personnel safety devices in order to accomplish contract requirements, the subcontractor must provide alternate means of protection prior to removing or invalidating any permanently installed safety devices or equipment and must obtain prior approval of the Subcontract Administrator.

**EN.29. FIRE PROTECTION**

The Joint Base Operations Support Contractor (JBOSC) Fire Department will provide fire response, inspection, and rescue services to the subcontractor as necessary.

The subcontractor shall be specifically responsible for:

Providing approved fire extinguishers of appropriate type for the hazards involved.

Reporting all fires to the JBOSC Fire Services (Dial 911) and contact BOEING Safety, Health and Environmental Affairs (SHEA) and the Technical Representative.

BOEING Safety, Health and Environmental Affairs (SHEA) shall be responsible for permitting Petroleum, Oils, and Lubricants (POL) cabinets for the subcontractor brings on base.

Hot work permits (brazing, welding, cutting, heat or spark producing devices, etc.) shall be coordinated through the AMS Representative.

The subcontractor shall contact BOEING Safety, Health and Environmental Affairs (SHEA) via the Subcontracts Administrator within five (5) working days after award of this Subcontract in order to discuss KSC permitting requirements and procedures.

**EN.30. EMERGENCY AND HURRICANE PREPAREDNESS**

The Emergency Preparedness Plan includes but is not limited to the loss of utilities, fire, explosion, and tornado.

In the event of a hurricane warning, the subcontractor shall:



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Police the area and place all materials possible in a location protected from weather;

Tie down, or identify and store, all outside equipment and materials;

Check all surrounding areas and roofs of buildings for loose material, equipment, debris, and any other objects which could be blown away or blown against existing buildings; and

Insure that temporary erosion controls are adequate.

In the event of a tornado warning, the subcontractor shall insure that all subcontractor personnel take cover in the nearest concrete block facility away from all windows and exterior doors and if in a vehicle, take cover in the nearest ditch.

**EN.31. ADVERSE WEATHER**

The subcontractor shall insure the safety of its employees during high winds, lightning, hurricane, tornado, etc. The subcontractor shall enforce adverse weather policies. AMS or BOEING Safety, Health and Environmental Affairs (SHEA) should be contacted for any questions or concerns.

**EN.32. WARNING LIGHTS**

Warning light designations at Kennedy Space Center include Flashing Red and Flashing Amber lights. The subcontractor shall insure these warning lights will be obeyed; violation may lead to exposure of personnel to hazardous conditions.

**EN.33. REPORTING OF MISHAPS**

The subcontractor shall immediately report to BOEING Safety, Health and Environmental Affairs (SHEA) any accidents or incidents which result in personal injury or death, and/or damage greater than \$1000 to KSC resources, equipment, or facilities being used. A close call; i.e., a situation or occurrence which causes no injury or damage or only minor damage (less than \$1000), but which possesses any potential to cause injury, damage or negative mission impact shall also be reported. A Manager's Report of Mishap, KSC Form 31-212, shall be prepared by AMS with assistance from the construction supervisor/personnel and submitted to BOEING Safety, Health and Environmental Affairs (SHEA) within 24 hours of mishap occurrence. Under the guidelines of KHB 1710.2C and/or NASA Management Instruction (NMI) 8621.1, Mishap Reporting and Investigating, BOEING Safety, Health and Environmental Affairs (SHEA) shall determine whether a final mishap report will be required. If required, a final mishap report shall be prepared and submitted to BOEING Safety, Health and Environmental Affairs (SHEA) within five (5) working days of the mishap.

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**EN.34. OCCUPATIONAL HEALTH SERVICES, INJURY TREATMENT, AND REPORTING REQUIREMENTS**

All subcontractor employees may utilize Government Occupational Health Facilities for injury and other emergency medical treatment. Occupational Health Services can be contacted at 911 (in an emergency).

The medical services set forth in KMI 1810.1 will be provided to the subcontractor by the Subcontracts Administrator to the extent that there will not be any restriction of the employees' rights under applicable Workers' Compensation statutory provisions.

Injuries shall be immediately reported to the Subcontracts Administrator and BOEING Safety, Health and Environmental Affairs (SHEA). Treatment will be recorded by the Occupational Health Facility (OHF) on KSC Form 6-2, Record of Injury.

Information from records generated as a result of rendition of medical services may be obtained through the Subcontracts Administrator upon written request.

**EN.35. LIFTING AND SUSPENSION OF LOADS**

The subcontractor shall insure:

Compliance with OSHA 29 CFR 1926/29 CFR 1910 applications and related Articles in KHB 1710.2 on Hard Hats and Control Areas,

All employees have been briefed on the operation to be performed,

Personnel will not stand or traverse under the load while it is being lifted, suspended, or transported,

A control area is established and maintained throughout the operation,

Hard hats are worn by all personnel performing the operation, and

Crane and crane operator certifications have been verified

**EN.36. WORK ON ELEVATED STRUCTURES**

The following shall apply as a minimum and the subcontractor shall review the aforementioned documents prior to the performance of work on elevated structures:

When personnel must work on unprotected portions of elevated structures, open sided structures, or outside of handrails 6 feet or more above a lower level, they shall be protected from falling by use of a guardrail system, safety net system, or personnel fall arrest system as outlined in OSHA 29 CFR 1926 Subpart M - Fall Protection.

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Anchorage points used to attach personnel fall arrest systems (life lines, lanyards) shall be capable of supporting 5000 lbs. per attached employee.

Lanyards should be as short as possible so as to limit a fall to no more than (6) six feet. Never reduce the length of a lanyard with a knot, and never lengthen a lanyard by attaching two or more lanyards together. Never use a guardrail as an attach point, always secure to an attachment point or structural member capable of sustaining a minimum dead weight of 5000 pounds per attached employee.

All body harnesses, lifelines, lanyards, self retracting lifelines, warning line systems must comply with 29 CFR 1926 Subpart M - Fall Protection. Safety belts are not permitted for use at KSC.

Personnel fall arrest system shall be inspected prior to use. Components of personnel fall arrest systems subjected to impact loading shall be immediately removed from service.

For work on elevated structures at KSC, personnel shall observe the procedures defined in KHB 1710.2.

Upon notification of tornado or lightning warning, personnel shall immediately take cover in a protected area of the structure if provided; otherwise, clear the structure, move to a protected building, and remain there until an all-clear is sounded.

Personnel who may be exposed to fall hazards shall be properly trained in accordance with 29 CFR 1926 Subpart M - Fall Protection.

#### **EN.37. LOCKOUT/TAGOUT PROCEDURE**

The subcontractor shall comply with the lockout/tagout and stop work procedures established in: OSHA 29 CFR 1926.417, Lockout and Tagging of Circuits; OSHA 29 CFR 1910.147, The Control of Hazardous Energy (Lockout/Tagout); KHB 1710.2C, KSC Safety Practices Handbook, Annex A, Lockout/Tagout Program..

#### **EN.38. TEMPORARY ELECTRICAL AND GFCI REQUIREMENTS**

The subcontractor shall comply with the requirements of OSHA 29 CFR 1926.404/405, and OSHA 29 1910.304 for temporary electrical power. All temporary 110 volt receptacle provided for construction use will be protected by Ground Fault Circuit Interrupters (GFCI). In all instances where GFCI protected circuits are not available, the subcontractor shall provide GFCI receptacle for use by his employees.

Subcontractor furnished extension cords and electric tools, excluding double insulated tools, shall be of three-wire type. Where there is evidence of damage, the damaged item shall be removed from service and tagged until required repairs are made.

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**EN.39. EXCAVATING AND TRENCHING**

The subcontractor shall comply with the requirements of OSHA 29 CFR 1926 Subpart P - Excavations, for excavating and trenching. All excavations and trenches five (5) feet or more in depth shall be properly sloped or shored. Excavations and trenches less than five (5) feet in depth may require sloping or shoring based on soil conditions. OSHA 1926.652 Table P-1 provides a guide for sloping of banks.

Excavated material or other materials shall be stored at least 2 feet or more from the edge of the excavation.

Dig permit requires coordination through the AMS Representative and BOEING Safety, Health and Environmental Affairs (SHEA).

**EN.40. SAFETY WALKDOWNS AND INSPECTIONS**

In order to insure a safe operating environment, the subcontractor shall perform regular safety walkdowns, inspections, and surveillance of all work areas of the project, and shall identify discrepancies, and insure corrective actions are taken to abate such discrepancies.

The subcontractor shall be responsible for the safety and health of the work being performed under this Subcontract. BOEING Safety, Health and Environmental Affairs (SHEA) will surveil all work areas for compliance with applicable Federal, State, and KSC regulations and standards as related to safety, health, and environmental.

BOEING Safety, Health and Environmental Affairs (SHEA) reserves the right to:

Verify the subcontractor's ability to perform the work safely.

Surveil work areas under this Subcontract as the subcontractor's facility or at KSC.

Take photographs/videos deemed appropriate during the surveillance process.

The subcontractor will be provided with the names of the BOEING Safety, Health and Environmental Affairs (SHEA) Representatives at the Prework Conference.

The subcontractor safety representative and AMS shall insure that applicable BOEING surveillance reports annotating any subcontract work area discrepancies are corrected within 24 hours and status provided through the AMS representative to BOEING Safety, Health and Environmental Affairs (SHEA).

All work performed by the subcontractor under the provisions of this Subcontract shall be subject to surveillance by both BOEING Safety, Health and Environmental Affairs (SHEA) and NASA Safety at any time and place.

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**EN.41. SAFETY VIOLATIONS**

Should BOEING non-essential personnel violate a control area established by the subcontractor, the subcontractor shall notify either the AMS representative or BOEING Safety, Health and Environmental Affairs (SHEA).

Should any BOEING employee observe a BOEING subcontractor employee violating established BOEING controlled work areas, the same requirements shall apply.

**EN.42. ROLLOVER PROTECTION REQUIREMENTS FOR MOBILE EQUIPMENT SAFETY AND HEALTH**

Guards against the hazards of rollover and seat belts shall be installed on all mobile (self-propelled) equipment at all times. Affected equipment includes; crawler and rubber-tired tractors, with or without attachments, such as, but not limited to, winches, front-end loaders, blades, self-propelled earth movers, including pan scrapers, bottom dumps, side dumps, rollers, graders, and water tank trucks. Canopy and supporting attachment shall be designed, fabricated, and attached to the frame in a manner to support no less than two (2) times the weight of the prime mover, based on the ultimate strength of the metal and integrated loading of supporting members with the resultant load applied at the point of impact.

There shall be a vertical clearance of 52 inches from the deck to the canopy where the operator enters or leaves the seat. Refer to OSHA 29 CFR 1926, Section 1000, for design criteria, except that equipment manufactured prior to July 1969 is excluded from these requirements. The subcontractor shall furnish documented justification for BOEING acceptance of the rollover protection system utilized.

**EN.43. PNEUMATIC / EXPLOSIVE ACTIVATED TOOLS**

The subcontractor shall assure that pneumatic and explosive activated tools are used in a safe manner. Only employees trained in the operation of the particular tool shall be allowed to operate a pneumatic or explosive activated tool. The subcontractor shall assure that employees using the subject tools follow the requirements of OSHA 29 CFR 1926.302, Power-Operated Hand Tools. Under no circumstances shall the subject tool be used in the vicinity of flight hardware, ground support equipment (GSE), explosives or flammable atmospheres

**EN.44. HAZARDOUS NOISE AREAS**

Where hazardous noise levels exist (> 85 dba) which cannot be controlled by engineering modifications, caution signs must be posted and positioned at entrances to, or on the periphery of hazardous noise areas. Designation of hazardous noise areas shall be coordinated with BOEING Safety, Health and Environmental Affairs (SHEA) through the subcontract administrator. Caution signs must be obtained from and returned to BOEING Safety, Health and Environmental Affairs (SHEA) through the

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subcontract administrator. Hearing protection equipment must be used when posting becomes necessary.

**EN.45. PROTECTIVE COATINGS**

A Certificate of Protective Coating Application shall be submitted by the subcontractor through the subcontract administrator to BOEING Environmental Services upon completion of equipment fabrication, modification, or refurbishment. (The Protective Coating Application includes installation of cadmium coated parts.)

**SPECIAL CONDITIONS CONSTRUCTION - REVISION A - 2/2/94**

**FA.1. CONTRACT DRAWINGS, MAPS AND SPECIFICATIONS**

Two (2) reproducible contract drawings and five (5) sets of prints of full size contract drawings, maps, instructions and specifications will be furnished to the Subcontractor without charge, except applicable publications incorporated into the technical provisions by reference. The work shall conform to the contract drawings, maps, instructions and specifications attached hereto and made a part thereof.

The Subcontractor shall check all drawings furnished him immediately upon their receipt and shall promptly notify the Subcontract Administrator of any discrepancies. The Subcontractor shall compare all drawings and verify the figures before laying out the work and will be responsible for any errors which might have been avoided thereby.

One set of reproducible contract drawings shall be used by the Subcontractor for final red lined/ as-built construction drawings to be submitted as part of the Final Construction Drawings (reference Clause FA.12. FINAL CONSTRUCTION DRAWINGS)

**FA.2. COMMENCEMENT, PROSECUTION AND COMPLETION OF WORK**

The Subcontractor shall be required to (a) commence work under this contract within the calendar days established at the Pre-work Conference, (b) prosecute the work diligently, and (c) complete the entire work ready for use not later than the date established at the pre-work conference. The time stated for completion shall include a final cleanup of the premises.

The completion date is based on the assumption that the successful offerer will receive the notice to proceed by the date established at the pre-work conference. The completion date will be extended by the number of calendar days after the above date that the Subcontractor receives the notice to proceed, except to the extent that the delay in issuance of the notice to proceed results from that failure of the Subcontractor to execute the contract and give the required performance and payment bonds within the time specified in the offer.

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**FA.3. ORDER OF PRECEDENCE - CONSTRUCTION**

Any inconsistency in this contract shall be resolved by giving precedence in the following order:

the contractual period of performance  
specifications  
drawings  
other documents, exhibits and attachments.

**FA.4. PRE-WORK CONFERENCE**

The Subcontractor and his Job Superintendent will be required to attend a Pre-work Conference to be scheduled by the BOEING subcontract administrator. Work at the site will not begin until the Subcontractor has attended the Pre-work Conference and Notice To Proceed has been issued. In addition, a representative of each first tier subcontractor may be present for this conference at the discretion of the Subcontractor or the subcontract administrator.

**FA.5. DOCUMENT SUBMITTALS**

Where any document is submitted to BOEING pertaining to this contract, the Subcontractor shall submit the original of said document. The Subcontractor shall submit each Document Submittal by using KSC Form 11-19 Transmittal Sheet (see Attachment #1), which will be furnished by BOEING. Document Submittals shall be numbered in logical sequence. The Subcontractor may use his own numbering system. Each submittal shall bear the number in a uniform location. Any re-submittals shall retain the same original submittal number with the revision designated (e.g. Letter #1, Rev. A). No Document Submittal shall bear the same submittal number as a Shop Drawing submittal (reference clause FA.11. SHOP DRAWING)

**FA.6. SUBMITTAL SCHEDULES**

The Subcontractor shall provide, within 5 calendar days of Notice To Proceed, for approval by the subcontract administrator with a concurrent copy submitted to the BOEING AMS Implementation Engineer (or the alternate identified by the subcontract administrator), the following schedule of submittals.

A schedule of all Shop Drawings and technical data submittals (reference clause FA.11. SHOP DRAWINGS) required by the contract documents. The schedule will reference the contract document requiring the submittal; the material, item or process for which the submittal is required; the submittal number and the identifying title of the submittal; the Subcontractor's anticipated submission date and the approval need date.

All submittals called for by the contract documents will be listed on the above schedule. If a submittal is called for but does not pertain to the contract work, the Subcontractor will include it in the schedule and annotate it "N/A" with a brief explanation. Approval of the

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schedule by the subcontract administrator or his duly appointed representative, does not relieve the Subcontractor of supplying submittals required by the contract documents but which have been omitted from the schedule or marked "N/A".

A copy of the schedule shall be dated and re-submitted monthly, to the subcontract administrator and the BOEING AMS Implementation Engineer (or the alternate identified by the subcontract administrator), with actual submission and approval dates annotated by the Subcontractor. The Subcontractor shall resubmit one final copy of the annotated schedule to the subcontract administrator and the BOEING AMS Implementation Engineer, when all items on the schedule have received BOEING approval.

The Submittal Schedule shall be tied to the construction schedule to ensure that submittals are approved before placing an order and/ or installation.

**FA.7. REQUEST FOR INFORMATION/ CLARIFICATION**

The Subcontractor shall promptly report to the AMS Implementation Engineer (or the alternate identified by the subcontract administrator) all problems or conflicting technical information encountered during contract performance so that BOEING may provide appropriate direction. Such problems will be reported on KSC Form No. 8-268(NS), Contractor Request for Information/ Clarification (RFI, see Attachment #2), to be provided by BOEING. The Subcontractor shall log (numbering sequentially) and control each RFI including those generated by his subcontractors. The Subcontractor will provide a the original of each RFI to the AMS Implementation Engineer (or the alternate identified by the subcontract administrator) and a copy to the BOEING subcontract administrator concurrently.

If there is no engineering required, the RFI will be answered and the AMS Integration Engineer will return it to the subcontract administrator who will forward answer to the Subcontractor. NOTE: This form is for information only, changes to the subcontract are not authorized via this form.

**FA.8. FIELD CHANGE REQUEST**

When a Subcontractor's Request For Information (RFI) (reference clause FA.7. REQUEST FOR INFORMATION/ CLARIFICATION) initiates a requirement for formal engineering changes, BOEING Engineering shall answer the RFI and generate a Field Change Request (FCR), BOEING Form #A91-F180-001 (see Attachment #3), with detailed instructions. The RFI and FCR shall be returned to the AMS Implementation Engineer (or the alternate identified by the subcontract administrator) for obtaining approval, and then submitted to the subcontract administrator for processing and issuance to the Subcontractor.

An FCR may also be prepared and issued to correct discrepancies identified by BOEING Engineering, and to correct nonconformances identified by BOEING Quality on a Field Discrepancy Report (reference clause FA.10. FIELD DISCREPANCY REPORT) during quality inspections.



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**FA.9. DEVIATIONS AND WAIVERS**

Deviation - When the Subcontractor proposes to perform work which does not conform to the requirements of the applicable contract drawings and specifications, the Subcontractor shall submit to the subcontract administrator for approval a written request for deviation on the non-conforming work. The Subcontractor shall concurrently submit a copy to the BOEING AMS Implementation Engineer (or the alternate identified by the subcontract administrator). Work performed by the Subcontractor prior to request approval, shall be at his risk.

Waiver - When the Subcontractor has already performed the work that is in non-conformance with the requirements of the applicable contract drawings and specifications, the Subcontractor shall submit to the subcontract administrator for approval a written request for a waiver on the non-conforming work. The Subcontractor shall concurrently submit a copy to the BOEING AMS Implementation Engineer (or the alternate identified by the subcontract administrator).

All deviation or waiver requests by the Subcontractor shall be submitted on BOEING Form #A91-F660-004 (Deviation/ Waiver Request, see Attachment #4), fully executed including an offer of consideration to BOEING. The request must be technically supported by justification, rationale, design considerations, calculations and other data which permits ready and conclusive evaluation by BOEING as to acceptability or non-acceptability.

Where a requested deviation or waiver on a particular aspect of the work has a relation to, or affects, other aspects of the work, those other aspects of the work shall be clearly identified and referenced. And, if the requested deviation or waiver necessitates a deviation or waiver on other aspects, requests for all such deviations and waivers must be submitted concurrently.

Any request not submitted in strict accordance with this provision will not be considered.

**FA.10. FIELD DISCREPANCY REPORT**

All contract document nonconformances encountered during inspections by BOEING Quality, shall be documented on a Field Discrepancy Report (FDR), BOEING Form #A91-F660-002 (see Attachment #5). The FDR shall be submitted to the AMS Implementation Engineer (or the alternate identified by the subcontract administrator) for review, distribution and disposition.

The AMS Implementation Engineer shall forward a copy of the FDR to the subcontract administrator. If engineering answers are required, a copy is forwarded to BOEING Engineering for disposition.

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Dispositions provided normally include, but are not limited to, "Rework To Drawing", "Repair As Follows", "Field Change Request / Engineering Order (EO)", or "Accept-As-Is".

The AMS Implementation Engineer (or the alternate identified by the subcontract administrator) will obtain disposition and required approvals of the FDR and issue to the Subcontractor either the FDR with specific instructions detailed, or a Field Change Request (reference clause FA.8. FIELD CHANGE REQUEST) when formal engineering changes are required.

This requirement shall take precedence over any other contract requirement pertaining to the number of copies to be submitted except for clause FA.11. SHOP DRAWINGS, clause FA.12. FINAL CONSTRUCTION DRAWINGS, and clause FA.13. TURNOVER DATA PACKAGE.

**FA.11. SHOP DRAWINGS**

The term Shop Drawings means drawings and technical data, submitted to BOEING for approval, by the Subcontractor or any lower tier subcontractor, pursuant to the contract, showing in detail (1) the proposed fabrication and assembly of structural elements and (2) the installation (e.g., form, fit, and attachment details) of materials and equipment. It includes drawings, diagrams, layouts, schematics, descriptive literature, catalog cuts, illustrations, schedules, operations and maintenance manuals, performance and test data, and similar materials furnished by the Subcontractor to explain in detail, specific portions of the work required by the contract.

The Subcontractor shall incorporate final BOEING approved Shop Drawings into the Technical (reference clause FA.13. TURNOVER DATA PACKAGE)

The Subcontractor shall submit Shop Drawings as detailed below.

- Two (2) reproducible sets and four (4) copies of all drawings (such as fabrication and installation drawings, layouts, schematics) and six (6) copies of all technical data (such as operations and maintenance manuals, catalog cuts, performance and test data and descriptive literature) called out in the contract documents shall be submitted to the subcontract administrator in accordance with the Subcontractor's Submittal Schedule, reference clause FA.6. SUBMITTAL SCHEDULE). One (1) copy shall be returned to the Subcontractor within fourteen (14) calendar days with appropriate review and notation (see paragraph below of this clause which deals with review and notation).
- The Shop Drawings shall be complete and detailed, including the original equipment manufacturer's names and part numbers, and shall contain all information required for checking without reference to material contained in other Shop Drawing transmittals. Partial submittals will not be accepted unless specifically approved by the subcontract administrator. Any partial submittals shall be so indicated and any outstanding submittal required to complete the package shall be identified.
- Shop Drawings shall be submitted in a logical sequence that is duly coordinated with long lead time procurements and with fabrication and construction schedules. Each submittal shall be accompanied by a completed copy of KSC Form 21-112, Shop Drawings for Approval and/ or Manufacturers Certificates (see Attachment #6), which shall be BOEING furnished and shall list the contract document requiring the Shop

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Drawing; the material, item or process for which the Shop Drawing is required and the submittal number and identifying title of the Shop Drawing.

- Shop Drawings shall be of a type suitable for microfilming and reproduction and shall be of a quality to produce clear, distinct lines and letters. All drawings shall have dark lines on a white background.

- ◆ Shop Drawings shall be uniform in size, nominally 24 by 36 inches, with a maximum size of 28 by 40 inches.

- ◆ Shop Drawings shall be numbered in logical sequence. The Subcontractor may use his own numbering system. Each drawing shall bear the number of the submittal (e.g. Submittal #1, Submittal #2, etc.) in a uniform location adjacent to the title block. Any re-submittals shall retain the same submittal number with the revision designated (e.g. Submittal #1, Rev. A).

- ◆ The contract number shall appear in the margin, immediately below the title block, for each drawing.

- ◆ A blank space, no smaller than 4 by 5 inches shall be reserved on the right hand half of each sheet for the BOEING disposition stamp.

- Review and approval notation will be as follows:

- ◆ Shop drawings marked "approved" authorize the Subcontractor to proceed with work covered by such drawings.

- ◆ Shop drawings marked "approved as noted" authorize the Subcontractor to proceed with the work covered, provided he takes no exception to the notations. The notes shall be incorporated on the Shop Drawings prior to submission of the final Shop Drawings.

- ◆ Shop drawings marked "returned for corrections" require the Subcontractor to make necessary corrections and revisions on the drawings and to re-submit them for approval in the same route as before, prior to proceeding with any of the work depicted on the drawings.

- ◆ Shop drawings marked "not approved" or "disapproved" indicate noncompliance with the contract requirements and the Shop Drawings shall be re-submitted with appropriate changes, within 5 working days. No item of work requiring a Shop Drawing shall be accomplished until the drawings are approved or approved as noted.

- ◆ The Subcontractor shall make any corrections required by the subcontract administrator. If the Subcontractor considers any correction or notation indicated on the returned Shop Drawings to constitute a change to the contract documents; notice as required under the clause entitled "Changes" (reference BOEING 858 "General Terms and Conditions" document) shall be given to the subcontract administrator. Approval of the Shop Drawings by BOEING Engineering shall not be construed as a complete check, but will indicate only that the general method of construction and detailing is satisfactory. The Subcontractor shall be responsible for the dimensions and design of adequate connection details and satisfactory construction of all work.

- ◆ Whenever the Subcontractor's Shop Drawings contain any changes or deviations from technical requirements of the applicable contract drawings, maps and specifications, they shall be clearly identified on the

- ◆ Shop Drawings concerned. All Shop Drawings containing deviations must be accompanied by a Deviation/ Waiver Request submitted in accordance with clause FA.9. DEVIATIONS AND WAIVERS.

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- If changes are necessary to approved Shop Drawings whether as a result of a contract change or for any other reasons, the Subcontractor shall make such revisions and submission of the Shop Drawings in accordance with the procedures detailed in this clause. No item of work requiring a Shop Drawings change shall be accomplished until the changed Shop Drawings are approved.

**FA.12. FINAL CONSTRUCTION DRAWINGS**

After completion of all construction and before final payment is made under this contract, the Subcontractor will submit to the BOEING AMS Implementation Engineer (or the alternate identified by the subcontract administrator) for obtaining BOEING approval, one complete set of reproducible red lined/ as built drawings no later than ten (10) calendar days after construction completion (final walkdown). The subcontract administrator has provided the reproducible contract drawings for this purpose; reference clause FA.1. CONTRACT DRAWINGS, MAPS AND SPECIFICATIONS, third paragraph. This requirement includes red lined/ as-built Shop Drawings, reference clause FA.11. SHOP DRAWINGS. These Final Construction Drawings will incorporate all changes and deviations and actual routing of all field routed utilities and services. All lines, letters and details will be sharp, clear and fully legible. All additions to the drawings will be precisely drawn to the scale of the original drawing.

An BOEING approved copy shall be returned to the Subcontractor within fourteen (14) calendar days with appropriate review and notation. Drawings marked "approved" will be the Subcontractor's final submittal, and will be incorporated into the Turnover Data Package (reference clause FA.13. TURNOVER DATA PACKAGE.) Drawings marked "returned for corrections" require the Subcontractor to make necessary corrections and revisions on the drawings and to resubmit them for approval in the same manner as stated above.

**FA.13. TURNOVER DATA PACKAGE**

The Subcontractor shall assemble all contract deliverable documents specified below, into a Turnover Data Package (TDP). The Subcontractor shall manage and maintain the TDP, updating all data as changes occur, during contract performance and until turnover of the TDP to the BOEING AMS Implementation Engineer (or the alternate identified by the subcontract administrator).

The documents assembled into the TDP shall be the final BOEING approved copies. The Subcontractor shall review and approve all documents contained within the TDP before submittal to the BOEING AMS Implementation Engineer (or the alternate). This includes all documents that have been developed by the Subcontractor or obtained from his vendors, suppliers, or his lower tier subcontractors.

The format of the TDP shall be a hard bound copy containing a table of contents of the documents provided and a separate indexed section for each category. The Subcontractor shall submit three (3) copies of the Turnover Data Package to the

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BOEING AMS Implementation Engineer (or the alternate) no later than ten (10) calendar days after contract completion (final walkdown).

The following Deliverable Documents (DD) DD-01 through DD-19, are descriptions of data that the Turnover Data Package may contain, as directed by the BOEING AMS Implementation Engineer (or the alternate identified by the subcontract administrator).

**ITEM DESCRIPTION**

DD-01 Subcontractor Shop Drawings - Drawings & technical data prepared by the Subcontractor (or his lower tier subcontractors) and approved by BOEING which include design drawings, fabrication and installation drawings, schematics, layouts, logic, interface, control, connection and elementary diagrams, etc. Subcontractor Shop Drawings also include technical data such as catalog cuts, operations & maintenance manuals, and descriptive literature, computer software, PLC ladder logic, access codes, passwords, etc. Reference clause FA.11. SHOP DRAWINGS.

DD-02 Final Red Line Drawings - Drawings originally provided by BOEING or prepared by the Subcontractor (or his lower tier subcontractors) which have been "red lined" to show as-built condition and that incorporate all changes and deviations. The drawings must be approved by BOEING. Reference clause FA.12. FINAL CONSTRUCTION DRAWINGS.

DD-03 Field Change Request - Form provided by subcontract administrator to the Subcontractor which authorizes new work based on changes to released engineering for problems identified by the Subcontractor or BOEING during contract performance. Reference clause FA.8. FIELD CHANGE REQUEST.

DD-04 Deviation / Waiver Requests - All BOEING approved and disapproved requests prepared by the Subcontractor requesting a deviation or waiver from the requirements of the contract documents. Reference clause FA.9. DEVIATIONS AND WAIVERS.

DD-05 Subcontractor Test Procedures - The test procedures prepared by the Subcontractor and approved by BOEING which consist of step by step instructions for the testing of a component, subsystem or system as specified by the contract.

DD-06 Subcontractor Test Results - The test results and associated data sheets which document the results of testing performed by the Subcontractor on a component, subsystem or system as specified by the contract.

DD-07 Test Reports - The certified reports of inspections and laboratory results including analysis and interpretation of test results performed by an independent testing agency. The report shall be properly identified and shall describe test methods used and shall comply with recognized test standards.

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DD-08 Factory or Shop Test Report - The report prepared by the Subcontractor or the original equipment manufacturer of tests performed on a component or subsystem at an off-site facility. The report shall include the test requirements and test results.

DD-09 Field Test Report - The report prepared by the Subcontractor of tests performed on a component, subsystem or system at the work site. The report shall include the test requirements and test results.

DD-10 Training Data - Materials to be provided by the Subcontractor for training of personnel on the component, subsystem or system as specified by the contract documents. This category also includes training records for training performed by the Subcontractor listing the date of training, type of training provided, and the personnel in attendance.

DD-11 Illustrated Parts Breakdown - Drawings illustrating a parts breakdown and listing all parts contained within a component, subsystem or system, with nomenclature, original manufacturer's name and part numbers.

DD-12 Itemized List of Subcontractor Provided/ Installed Equipment - A list of all Subcontractor provided and installed equipment furnished under the contract, showing manufacturer, model and serial number, nameplate data and corresponding equipment cost and labor cost for each item.

DD-13 Itemized List of Subcontractor Provided/ Installed Materials - A list of all Subcontractor provided and installed materials by type, quantity and corresponding cost for material and labor.

DD-14 Manufacturer Operations and Maintenance Manual - Original equipment manufacturer manual showing equipment operation, maintenance, and repair for equipment acquired by the Subcontractor. This category also includes all manuals supplied to the Subcontractor with BOEING Furnished Equipment. Reference clause FA.43. BOEING FURNISHED MATERIAL/ EQUIPMENT.

DD-15 Manufacturer's Warranties - Original Equipment manufacturer warranties provided with equipment acquired by the Subcontractor, or provided to the Subcontractor with BOEING Furnished Equipment. Reference clause FA.43. BOEING FURNISHED MATERIAL/ EQUIPMENT.

DD-16 Subcontractor Warranty - A one written year Subcontractor warranty that all Subcontractor provided material or equipment furnished under this contract will be of good quality, all workmanship will be free from defects, and that the work will conform with the requirements of the contract documents. Reference clause FA.48. SUBCONTRACTOR WARRANTY.

DD-17 Recommended Spare Parts List - A list provided by the Subcontractor identifying spare parts necessary to insure continued efficient operation of the component, subsystem or system or a twelve (12) month period.

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DD-18 Certificates of Compliance - Documents which certify that material and equipment acquired by the Subcontractor meet the requirements specified in the contract documents. Each certificate shall be signed by an official authorized to certify on behalf of the material supplier or equipment manufacturer and shall identify the quantity and date.

DD-19 Material Safety Data Sheets (MSDS) - Written or printed material concerning a hazardous chemical, for materials provided by the Subcontractor during performance of the contract. The MSDS is to be prepared in accordance with OSHA 29CFR 1910.1200(g). Reference Industrial Hygiene Article 1.

**FA.14. COMPOSITION OF THE SUBCONTRACTOR**

If the Subcontractor hereunder is comprised of more than one legal entity, each such entity shall be jointly and severally liable.

**FA.15. SECURITY CONTROLS AT KSC**

The Subcontractor shall require each employee engaged on the work site to display identification badges and special access badges as required and furnished by the John F. Kennedy Space Center. When required by the subcontract administrator, the Subcontractor shall obtain and submit background investigation and badging forms on persons employed or to be employed by the Subcontractor under this contract. Prior to proceeding with on-site performances, the Subcontractor shall submit the following information to the subcontract administrator, 48 hours prior to being required.

Subcontractor name (business), address and phone number  
Contract number and location of work site(s)  
Employee names as they appear on drivers licenses  
Contract commencement and completion dates  
Employee social security number or green card information  
Status as prime or subcontractor with all addresses and phone numbers

Identification and badging of employees shall be accomplished prior to proceeding with on-site performance of the contract. During performance of the contract, the Subcontractor shall, upon termination of an employee, immediately deliver such employee's identification badge to the Subcontractor Administrator and upon completion of performance, the Subcontractor shall immediately deliver all employee badges to the Subcontract Administrator. It is agreed and understood that all NASA identification badges remain the property of NASA and the Government reserves the right to invalidate such badges at any time.

An acceptable Government investigation will be required before the contractor's employees will be permitted unescorted access to controlled areas identified by the BOEING Security Office. Notification of such controlled areas will be furnished to the Subcontractor by the subcontract administrator.

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**FA.18. TEMPORARY STRUCTURES, OFFICES & WORK AREAS**

Only materials and equipment to be used for the performance of the contract work may be stored at the work site area or in warehouses and shop facilities (whether erected by the Subcontractor or not) located on BOEING controlled facilities.

Kennedy Space Center regulations require all Subcontractor-owned or leased trailers to be identified by BOEING assigned numbers. The required number will be obtained by the BOEING AMS Implementation Engineer (or the alternate identified by the subcontract administrator). The size and location of the numbers shall comply with the latest revision of KMI 1540.1. The Subcontractor must inform the subcontract administrator of the dimensions of any trailer prior to delivery of the trailer to the site. The Subcontractor is to apply the numbers on the trailers within 14 days after being informed of the numbers to be used, or sooner if dictated by BOEING.

All trailers, temporary structures, and materials or equipment stored at the work site must be tied down to prevent damage in the event of adverse weather. Reference Section VII, Safety Article entitled "Adverse Weather".

**FA.19. PROJECT SIGN**

Any sign erected by the Subcontractor to identify his project, or for any other purpose, must be authorized by the subcontract administrator. The format for the sign shall be furnished by the Subcontractor to the subcontract administrator for approval prior to use on-site.

**FA.20. TELEPHONE SERVICE**

The Subcontractor is to make his own arrangements for telephone service through the local telephone company. Normally, a minimum of 28 days should be allowed for installation of this service.

**FA.21. PROTECTION OF EXISTING UTILITIES**

When existing utility lines or structures are indicated on the drawings, and when existing utility lines to be removed occur within the area of operations, the Subcontractor shall notify the BOEING AMS Implementation Engineer (or the alternate identified by the subcontract administrator) prior to beginning of operations in ample time for taking measures to prevent interruption of any required service. Utilities that are indicated on the drawings (or the location of which is made known to the Subcontractor prior to beginning of operations) and all utility lines constructed during the Subcontractor's operation shall be protected from damage, but if damaged, shall be repaired by the Subcontractor at no additional cost to BOEING. In the event the Subcontractor damages any existing utility lines that have not been indicated on the drawings, or the locations of which have not otherwise been made known to the Subcontractor, report thereof shall be made immediately to the subcontract administrator and the BOEING AMS Implementation Engineer (or alternate). If the subcontract administrator



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determines that repairs shall be made by the Subcontractor, such repairs will be authorized per the "Changes" clause, of the contract (reference BOEING 858 General Terms and Conditions document).

**FA.22. SAFETY & WORK CONTROL PRACTICES IN ELECTRICAL AND/OR COMMUNICATIONS MANHOLES**

Permit Required Confined Space entry clearance from the Boeing Safety and Environmental Services Office is required before any Subcontractor personnel enter into a communications or electrical manhole. The Subcontractor must submit a request, at least 48 hours in advance through the BOEING Subcontract Administrator (SCA), to the BOEING AMS Implementation Engineer (or the alternate identified by the subcontract administrator) to notify and obtain approval from the Environmental Services Office. Support from the Environmental Health Office of the Base Operations Contractor may be scheduled by calling 867-2400 and requesting an atmospheric check of the space for the time when the entry is scheduled.

For Construction activities the subcontractor may also have to comply with 29CFR 1926.21 and 29CFR 1926.353

**FA.23. UTILITY OUTAGES**

All utility outages required during the prosecution of work which affect utility systems, such as electrical, water, and air handling systems, or fire detection and protection systems, will require prior approval. Work shall be scheduled to hold outages to a minimum. The Subcontractor must request all utility outages from the BOEING AMS Implementation Engineer (or the alternate identified by the subcontract administrator), who will obtain proper approvals for the outages. Request for utility outages shall be made immediately upon identification of requirement and no later than fifteen (15) calendar days in advance of the time required. The Subcontractor shall state the system involved, area involved, approximate time of outage, and the nature of the work involved. The fact that the Subcontractor requests an outage for a specific time period does not necessarily mean that the outage will take place. Due to the nature of the operations at Kennedy Space Center, the Subcontractor probably will not know until the day before the requested date if the outage will take place as scheduled. Outages may need to take place outside regular working hours. The Subcontractor will not be entitled to additional payment for working irregular hours due to outages.

**FA.24. STORAGE AND PROTECTION OF MATERIAL TO BE REUSED**

All items of material to be removed and reinstalled by the Subcontractor shall be protected during removal and stored in a manner such that the material will not be damaged during removal or storage period. Any material designated for reuse but damaged beyond use will be replaced by the Subcontractor at no cost to BOEING.

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**FA.25. MAINTENANCE OF BOEING EQUIPMENT**

BOEING equipment in the Subcontractor's work area may require servicing or maintenance during the contract time frame. The Subcontractor shall allow BOEING and/ or its support contractors into his work area to perform the periodic maintenance.

Existing systems and equipment require periodic maintenance that cannot be readily defined in terms of frequency and duration. This maintenance will be performed by BOEING and/ or its support contractors on a non-interference basis as much as possible. Such maintenance will be coordinated with the Subcontractor through the BOEING AMS Implementation Engineer (or the alternate identified by the subcontract administrator) to avoid delay or interference with the Subcontractor's work.

**FA.26. TRAFFIC RESTRICTIONS**

The Subcontractor will not move oversized loads and/ or slow moving vehicles on established roads within the Kennedy Space Center or the Cape Canaveral Air Force Station (CCAFS) from 6:30 a.m. to 8:30 a.m. and 3:30 p.m. to 5:30 p.m. on weekdays. Other than the above restricted hours, the Subcontractor may move oversized and/ or slow moving vehicles to the work site provided all requirements of the Florida State Highway Department have been met.

Movement of any Subcontractor vehicle in excess of maximum width, height and length specified by Florida Statutes Chapter 316 shall be accompanied by the Subcontractor's designated Convoy Commander. The Subcontractor's Convoy Commander shall be totally responsible for the oversized vehicular movement to include making a physical inspection for possible obstructions along the intended route and obtaining all required special permits. Notification of any move requires 48 hour notice to BOEING AMS Implementation Engineer (or the alternate identified by the subcontract administrator) for approval and coordination.

**FA.27. LOAD LIMITATIONS ON ROADWAYS**

The Subcontractor shall protect existing Kennedy Space Center roadways (paved and unpaved) from damage by his construction vehicles. The Subcontractor's vehicles shall not be loaded in excess of Florida State Department of Transportation weight limitation regulations.

**FA.28. AVIATION OBSTRUCTION LIGHTS**

The Subcontractor will provide at least two Aviation Red Obstruction Lights or two High Intensity White Obstruction Lights on all temporary structures (including cranes) over 100 feet above ground level. Lights must be constructed and installed per U.S. Department of Transportation, Federal Aviation Administration publication AC 70/7460-1F, Chapter 4, paragraph 15, subparagraph e. Lights will be operated during all periods of reduced visibility, between sunset and sunrise, and as directed by the BOEING AMS Implementation Engineer (or the alternate identified by the subcontract administrator).

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**FA.29. RF RESTRICTIONS DURING CONSTRUCTION**

The Subcontractor will be required to meet the provisions of Kennedy Management Instruction 2570.1C KSC Radio Frequency Management, and the following documents referenced therein:

NASA Management Instruction 5104.2  
NASA Radio Frequency Management Manual  
NASA Management Instruction 2570.2B (Radio Frequency Management)

During periods of special testing on Kennedy Space Center and at the Cape Canaveral Air Force Station, the Subcontractor may be required to cease radiating on any radio equipment he may be utilizing at the time.

Any construction equipment utilized by the Subcontractor which may be causing radio frequency interference will be required to shut down during special tests. NASA will utilize its frequency analysis equipment to determine the interference.

**FA.30. HAND EXCAVATION**

Due to numerous existing underground utilities, all excavation in the areas identified on the contract documents and during the pre-bid site walkdown will be dug carefully using hand tools only. Reference clause FA.31. EXCAVATION PERMITS for further details.

**FA.31. EXCAVATION PERMITS**

The Subcontractor must request and obtain excavation permits prior to performing any excavation. Request for excavation must be submitted to the BOEING AMS Implementation Engineer (or the alternate identified by the subcontract administrator) at least twenty (20) calendar days prior to planned date of excavation. The excavation permit will then be prepared and submitted by the BOEING AMS Implementation Engineer (or the alternate). Upon receiving permit approval, the BOEING AMS Implementation Engineer (or the alternate) will notify the Subcontractor.

**FA.32. WELDING AND BURNING PERMITS**

Permits are required for all welding and burning operations. Requests for these permits should be made in writing to the BOEING AMS Implementation Engineer (or the alternate identified by the subcontract administrator) three (3) calendar days in advance of the time required.

**FA.33. RESTORATION OF GRASSED AREAS DISTURBED BY CONSTRUCTION**

The Subcontractor shall, prior to completion of the contract, grass all areas disturbed by construction activities by seeding and mulching or, when erosion may occur, by sodding,

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except where specifically directed otherwise in the contract documents or by the subcontract administrator.

**FA.34. WORK PERIOD**

Subcontractor's work day will be limited to first shift 7:00 a.m. to 4:00 p.m., on Monday through Friday only, unless otherwise determined at the pre-work conference. Any other work period will require special/ written approval from the subcontract administrator three (3) working days in advance of proposed change in work periods.

**FA.35. SUPERINTENDENT ASSIGNMENT**

Any assigned superintendent must be a full-time employee of the Subcontractor and be 100% dedicated for superintending the work required by this contract. The superintendent shall not fill any other positions in performance of this contract.

**FA.36. 100% QUALITY INSPECTION**

The Subcontractor shall maintain an effective Quality Program that complies with that part of the contract entitled "Inspection/ Testing Requirements", Section IV. The Subcontractor's program shall encompass all management and supervisory actions that affect quality of the finished construction work.

The Subcontractor shall designate a qualified full-time dedicated (100%) quality inspector within his on-site organization whose sole responsibility shall be the day-to-day on-site management and direction of the Quality Program. The appointed quality inspector shall be responsible for verifying and documenting all technical requirements of the contract documents, and shall submit to the BOEING AMS Implementation Engineer (or the alternate identified by the subcontract administrator), a weekly quality status report. Qualification credentials of the designated individual shall be provided to the BOEING AMS Implementation Engineer (or the alternate) for review and concurrence. This program shall be monitored by BOEING Quality and the individual designated to direct the program shall report to BOEING Quality and the BOEING AMS Implementation Engineer (or the alternate).

**FA.37. UTILITY SERVICES AVAILABLE**

When the following utilities are available at the work site, they will be provided at no cost to the Subcontractor in reasonable amounts:

potable water  
volt electrical service

Any utility not listed above which is required for performance of the contract work shall be provided by the Subcontractor after requesting approval from the BOEING AMS Implementation Engineer (or the alternate identified by the subcontract administrator).

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Where no electrical hookup is available, the use of portable generators will be subject to prior approval from the BOEING AMS Implementation Engineer (or the alternate).

**FA.38. SANITARY FACILITIES**

The Sanitary Facilities will be designated at the pre-bid conference. One of the following will apply:

Available Restroom facilities are available to the Subcontractor within or nearby the work site. If use of these facilities by the Subcontractor results in excessive construction grime and debris, the Subcontractor will, at the direction of the subcontract administrator or his duly appointed representative, clean the facilities at no cost to BOEING.

Not Available - There are no sanitary facilities available for use by the Subcontractor at the work site. The Subcontractor shall provide all sanitary facilities in accordance with KHB 1870.1 Environmental Sanitation Handbook, for the needs of the Subcontractor personnel.

**FA.39. WEEKLY STATUS MEETING**

The Subcontractor shall attend a weekly progress / status meeting to be scheduled by the BOEING AMS Implementation Engineer (or the alternate identified by the subcontract administrator) for the purpose of determining progress status, delaying factors, material delivery schedules, status of shop drawing submittals, and work to be completed during the next week.

**FA.40. STATUS REPORT ON MATERIAL ORDERS**

Within seven (7) days after Notice to Proceed, the Subcontractor shall submit, for approval by the subcontract administrator, an initial Status Report on Material Orders. The Subcontractor will also forward a copy to the BOEING AMS Implementation Engineer (or the alternate identified by the subcontract administrator) concurrently. This report will be updated and resubmitted every 14 days as the status on materials orders changes.

The report shall list, in chronological order by need date, all material orders necessary for completion of the contract, including those orders placed by subcontractors as well as the Subcontractor. The following information will be required for each material order listed:

Material name, supplier and invoice number.

CPM activity number affected by the order, if applicable.

Delivery date needed to allow all directly and indirectly related work to be completed within the Contract Performance Period.

Current delivery date agreed on by supplier.

When current delivery date exceeds delivery date needed, the effect that delayed delivery date will have on contract completion date.

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When current delivery date exceeds delivery date needed, a summary of efforts made by the Subcontractor to expedite the delayed delivery date to bring it in line with the needed delivery date, including effort made to place the order (or subcontract) with other suppliers.

**FA.41. PROGRESS SCHEDULE**

At the pre-bid conference, one of the following types of Progress Schedules will be identified as a requirement.

**CRITICAL PATH METHOD (CPM)**  
**PROGRESS BAR CHARTS**

**Critical Path Method:** The progress schedule shall be a standard, commercially available, computerized Critical Path Method system acceptable to the subcontract administrator or his duly appointed representative. The Subcontractor shall submit to the subcontract administrator and the BOEING AMS Implementation Engineer (or the alternate identified by the subcontract administrator) a system description and sample for approval within seven (7) calendar days after Notice To Proceed has been issued. In addition, at the pre-work conference the Subcontractor shall submit a list of projects on which he has successfully applied the proposed system as proof that he has the software manufacturer's authorized agent available for training and consultation. Approval of the system will be based on the following criteria.

**Graphic Display:** The graphic display shall be a standard network capable of illustrating the Required Data. Drafting shall be computer generated on standard 24 by 36 inch (nominal size) drafting sheets or on small (11" by 17" minimum) sheets with separate overview and detail breakouts. Any graphic display system used shall be readily legible with clear, consistent method for continuations and detail referencing. The critical path shall be clearly delineated on the display. When milestone dates are included in the Contract they shall be clearly indicated on the display.

**Data Display:** The Required Data shall be presented as a separate printout on paper or, where feasible, may be printed on the same sheet as the graphic display. Data shall be organized in a logical coherent display capable of periodic updating.

**Required Data:** Data shall include verbal activity descriptions with numerical ordering system cross referenced to the graphic display. Additionally, cost, (broken down into separate materials and labor costs), duration, early start date, early finish date, late start date, late finish date and float shall be detailed for each activity. A running total of the percent complete based on completed activity vs. total Contract cost shall be indicated. A system for indicating scheduled vs. actual activity dates and durations shall be provided.

**Level of Detail:** The schedule shall be of sufficient detail to facilitate the Subcontractor's control of the job and to allow the subcontract administrator to readily follow progress for all portions of the work. Schedule shall include submittals, tests and outages.

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The Subcontractor shall submit the initial Progress Schedule to the subcontract administrator within 14 calendar days of Notice to Proceed, and also forward a copy to the BOEING AMS Implementation Engineer (or the alternate) concurrently. The schedule shall be updated and resubmitted monthly beginning seven (7) calendar days after return of the approved initial schedule. The Subcontractor shall submit one reproducible copy to the subcontract administrator, and forward one copy to the BOEING AMS Implementation Engineer (or the alternate). Updating shall entail complete revision of the graphic and data displays incorporating all changes in scheduled dates and performance periods. Red-lined updates will only be acceptable for use at weekly status reviews.

The Subcontractor shall appoint an individual to serve as his Schedule Specialist. The Schedule Specialist shall have the responsibility of updating and coordinating the schedule with actual job conditions. In addition to the monthly updating the Schedule Specialist shall participate in weekly status meetings and present current information on the status of purchase orders, shop drawings, off-site fabrication, materials, deliveries, subcontractor activities, anticipated needs for Government Furnished Equipment and any problem which may impact the Contract Performance Period.

**Network Changes:** For any condition or action which impacts the schedule the Subcontractor shall submit within 5 calendar days an Activity Time Impact Proposal with supporting justification. The supporting justification shall include node numbers and activity descriptions affected. If more than five (5) activities are affected, the Subcontractor shall supply a fragmentary network diagram showing the inter-relationship of the affected activities to each other and to the basic network diagram. The proposal shall describe and be limited to the time impact (changes in start dates or duration) the condition or action causes to the immediately affected schedule activities. Changes to the Contract Performance Period shall not be addressed in this Activity Time Impact Proposal. The subcontract administrator will respond within 5 working days with acceptance of the Subcontractor's proposal or with an alternate proposal. Should the Subcontractor fail to submit an Activity Time Impact proposal within 5 work days, the subcontract administrator will issue a unilateral decision specifying the time impact to the activity. Upon mutual agreement on activity time impact or upon the subcontract administrator's unilateral decision the Subcontractor shall incorporate the new activity duration or start date in the monthly schedule update. The Subcontractor shall then analyze the updated schedule for impact to the Contract Performance Period.

If by the next monthly schedule update after submittal of the Activity Time Impact no mutual agreement has been reached and if no unilateral decision has been issued the Subcontractor shall update the schedule using the subcontract administrator's alternate proposal. When a mutual agreement is reached on the Activity Time Impact the agreed upon activity duration or start date shall be incorporated in the next scheduled update. The Subcontractor shall then analyze the updated schedule for impact to the Contract Performance Period. Note: No Contract extension will be granted when sufficient float is available to cover the Activity Time Impact.

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Within 15 days of any schedule update which indicates Subcontractor impact to the Contract Performance Period the Subcontractor shall submit a written statement detailing the number of days delay and the actions the Subcontractor intends to take to bring the Subcontractor's performance back within the schedule.

In the event a schedule update shows delay to the contract based on both BOEING impact and Subcontractor impact, available float shall be assigned to the Activity Time Impact Proposal which is dated earliest.

If, in the opinion of the subcontract administrator, the Subcontractor falls behind the progress schedule, the Subcontractor shall take such steps as may be necessary to improve his progress and the subcontract administrator may require him to increase the number of shifts, or overtime operations, days or work, or the amount of construction plant, or all of them, and to submit for approval such supplementary schedule or schedules in chart form as may be deemed necessary to demonstrate the manner in which the agreed rate of progress will be regained, all without additional cost to BOEING.

Failure of the Subcontractor to comply with the requirements of the subcontract administrator under this provision shall be grounds for determination by the subcontract administrator that the Subcontractor is not prosecuting the work with such diligence as will insure completion within the time specified. Upon such determination, the subcontract administrator may terminate the Subcontractor's right to proceed with the work, or any separable part thereof, in accordance with the Default terms of this contract (reference clause FA.7. REQUEST FOR INFORMATION/ CLARIFICATION).

**Progress Bar Charts:** The Subcontractor shall submit the Progress Chart in one reproducible, for approval by the subcontract administrator and the BOEING AMS Implementation Engineer (or the alternate identified by the subcontract administrator), within seven (7) calendar days after Notice To Proceed has been issued.

The Subcontractor shall prepare the Progress Chart in the form of a Bar Chart utilizing KSC Form OT-2506 Contractor Progress Chart (see Attachment #7) or comparable format approved by the subcontract administrator and the BOEING AMS Implementation Engineer (or the alternate).

The Subcontractor shall include no less than the following information on the Progress Chart:

A breakdown into major headings for primary work divisions such as "Architectural", "Civil", Electrical, Mechanical", etc.

A line item breakdown under each major heading sufficient to track the progress of the work; e.g., under "Mechanical" use "Heat Pump", etc.; under "Civil" use "Clearing and Grubbing", "Installation of Storm Drainage", "Foundation Form work", "Foundation Pour and Finish", "Lime-rock Stabilization", "Asphalt", etc.; and under "Architectural" use Wall Board", "Doors and Frames", "Paint and Trim", "Carpet and Accessories", "Test and Checkout", etc.



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A line item showing contract finalization tasks which includes Punch List, Clean-up and Demobilization, and Final Construction Drawings.

A material bar and a separate labor bar for each line item. Both bars will show the scheduled percentage for any given date within the contract performance period. The labor bar will also show the number of men (man-load) expected to be working on any given date within the Contract Performance Period.

The Subcontractor shall update the progress schedule in one reproducible every fourteen (14) calendar days throughout the Contract Performance Period, submit to the subcontract administrator and forward one copy to the BOEING AMS Implementation Engineer (or the alternate), with actual costs reflected on the Final Progress Bar Chart.

**FA.42. BOEING AMS 72 HOUR/ 11 DAY OPERATIONS SCHEDULE**

The Subcontractor will be required to prepare and submit to the BOEING AMS Implementation Engineer an input to the BOEING AMS 72 hour/ 11 day operations schedule (a total of 14 days). The schedule form (see Attachment #7) will be provided by the BOEING AMS Implementation Engineer at the pre-work conference. This schedule must be prepared and provided on a daily basis prior to 1:00 p.m. The schedule must show the Subcontractor's planned operations in detail for the next 3 days in hourly increments and in shift increments for the following 11 days. All Subcontractor operations requiring support from KSC, such as outages or fire and safety standby for hazardous operations, will be shown on the schedule.

**FA.43. BOEING FURNISHED MATERIAL / EQUIPMENT**

BOEING shall furnish to the Subcontractor for use in connection with this contract the material/ equipment listed in the attached contract documents. This is an exclusive list of property to be provided and no other property will be furnished. All property required in performance of this contract and not listed herein shall be furnished by the Subcontractor.

All BOEING furnished items, quantities, condition, availability dates and storage locations will be noted in the contract documents. The Subcontractor shall be responsible for picking up and transporting the BOEING furnished property, bearing all cost for transporting and handling, from the storage location, as identified by the subcontract administrator, to the job site. Request for BOEING furnished property shall be made in writing to the BOEING AMS Implementation Engineer (or the alternate identified by the subcontract administrator) no more than 30 days prior to his need date for installation of that item.

The Subcontractor shall verify the quantity and condition of such BOEING furnished property upon pickup, acknowledge receipt thereof in writing to the subcontract administrator, and in case of damage or shortage of such property, he shall within twenty-four (24) hours report in writing such damage or shortage to the subcontract administrator. The Subcontractor shall be responsible for storage of all BOEING furnished material/ equipment in such a manner as to protect the BOEING furnished

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material/ equipment from deterioration from its original condition. Multi-conductor cable end cuts shall be sealed with an approved cable sealant.

All unused BOEING furnished material/ equipment will be dispositioned by the BOEING AMS Implementation Engineer (or the alternate). All items designated to be returned to storage or scrapped, shall be delivered and off-loaded by the Subcontractor at the areas appointed by the BOEING AMS Implementation Engineer (or the alternate).

To transport any unused BOEING furnished material/ equipment, the Subcontractor shall prepare a DD Form 1149 Requisition and Invoice/ Shipping Document (see Attachment #8), which will be supplied by BOEING. The Subcontractor shall deliver and off-load the items to the designated location, obtain the receiving party's signature, and return the completed form to the BOEING AMS Implementation Engineer (or the alternate).

**FA.44. DOWNTIME AND EXCAVATION HOLDS**

The Subcontractor shall allow, in his bid, for a maximum number of days during which all construction activities will be prohibited as determined at the pre-bid conference. In addition, the Subcontractor shall allow for a maximum number of days during which all excavation and other subsurface activities will be prohibited but other construction activities will be allowed as determined at the pre-bid conference. BOEING will provide twenty-four hours notice each time these restrictions are invoked.

**FA.45. USE OF KENNEDY SPACE CENTER BORROW AREAS**

Utilization of the KSC Borrow Area may be used with NASA DE approval obtained through the BOEING AMS Implementation Engineer (or the alternate identified by the subcontract administrator). This option will be determined at the pre-bid conference. If this option is utilized, also reference Environmental Article 9, "Management of KSC Borrow Areas".

**FA.46. PROTECTION AND CLEAN-UP OF CLEAN ROOM FACILITIES**

Prior to beginning any construction within the Clean Room, the Subcontractor will arrange with the BOEING AMS Implementation Engineer (or the alternate identified by the subcontract administrator) for an airborne particle count. After construction is complete, a visual inspection and another particle count will be made by BOEING. Should the second particle count be higher than the pre-construction count, or if any surfaces have been visually contaminated, the Subcontractor will be required to clean all Clean Room surfaces and equipment as follows:

Walls, ceilings, ledges, rails, equipment, etc.; hand wipe all surfaces with low lint cloths or foam wipes using a cleaning solution of Joy detergent or tri-sodium phosphate. Follow with a rinse wipe with distilled water.

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Floors; machine scrub floors with abrasive pads and Johnson Wax Stripper #4595 or approved equal commercial cleaning solution followed with three or more clear washes until all residues are removed.

Subcontractor must repeat the above cleaning procedures until an airborne particle count meets the requirements of K-STSM-14.2.1, tables 3-1 and 3-3, or is lower than the pre-construction level and until all surfaces are visibly clean. Any surface which cannot be restored to its pre-construction cleanliness will be refinished by the Subcontractor to match existing finishes and materials.

The Subcontractor will protect Clean Room floors, walls, ceilings and all equipment from contamination by dust and fumes. This will entail isolating all dust and fume producing operations within a partitioned area and covering or protecting all facility surfaces within this work area.

The Subcontractor will erect visqueen covered partitions to control work area contamination.

Floors will be protected from construction equipment damage with visqueen and plywood covering. An BOEING approved exhaust venting system must be in place prior to the use of any gasoline/ diesel fuel powered equipment. The BOEING approval will be coordinated by the BOEING AMS Implementation Engineer (or the alternate identified by the subcontract administrator). Drip pans will be used beneath parked equipment which contains hydraulic fluid, oil or other organic fluids. Any construction vehicle which leaks oil or other organic liquids will not be allowed within the facility. Wherever work is performed above Clean Room ceilings, the Subcontractor shall provide and install adequate protection above the ceiling to prevent damage from falling debris. No demolition or construction debris shall be stored on beams or platforms above the ceiling. The Subcontractor shall remove all such debris as it is produced. Particulate matter shall be removed by vacuuming should it accumulate on the upper surface of the ceiling.

**FA.47. SALVAGE AND EXCESS MATERIALS/ EQUIPMENT**

All items or materials designated by BOEING to be salvaged or excessed shall be indicated in the contract documents and/ or at the pre-work conference.

All items or materials designated to be salvaged shall remain the property of BOEING and will be segregated, itemized, delivered and off-loaded by the Subcontractor at the storage area appointed by the subcontract administrator or his duly appointed representative. The Subcontractor shall maintain adequate property control records for all materials or equipment specified to be salvaged. These records may be in accordance with the Subcontractor's system of property control if approved by the subcontract administrator or his representative.

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All items or materials designated to be excessed, shall be delivered and off-loaded by the Subcontractor at the area appointed by the subcontract administrator or his duly appointed representative.

The Subcontractor shall be responsible for adequate storage and protection of salvaged and/ or excessed materials and equipment until it is otherwise disposed by the subcontract administrator or his representative.

To transport any salvage and/ or excess materials/ equipment, the Subcontractor shall prepare a DD Form 1149 Requisition and Invoice/ Shipping Document (see Attachment #8), which will be supplied by BOEING. The Subcontractor shall deliver and off-load the items to the appointed location, obtain the receiving party's signature, and return the completed form to the BOEING AMS Implementation Engineer (or the alternate identified by the subcontract administrator).

**FA.48. SUBCONTRACTOR WARRANTY**

The Subcontractor warrants in writing to BOEING and the Government that all Subcontractor provided materials and equipment furnished under this contract will be of good quality and new unless otherwise required or permitted by the contract documents.

All work will be free from defects not inherent in the quality required or permitted, and that the work will conform with the requirements of the contract documents.

If any work is found to be not in accordance with the requirements of the contract documents, the Subcontractor shall correct it promptly subsequent to receipt of written notice from BOEING even if BOEING has previously given the Subcontractor a written acceptance of such conditions, when such conditions, by their inherent nature, inaccessibly, or location did not permit sufficient inspection and/ or testing to identify the defects.

This one year Subcontractor Warranty is essentially a repair obligation that commences from the date of final acceptance by BOEING.

This Subcontractor Warranty shall not negate, limit, or otherwise alter any other warranty, either expressed or inferred, which is lawfully due BOEING or the Government by the Subcontractor's execution of this contract.