

<b>AMENDMENT OF SOLICITATION/ MODIFICATION OF CONTRACT</b>		1. CONTRACT ID CODE	PAGE OF PAGES 1   2
2. AMENDMENT/MODIFICATION NO. 7	3. EFFECTIVE DATE See Block 16C	4. REQUISITION/PURCHASE REQ. NO. N/A	5. PROJECT NO. (If applicable)
6. ISSUED BY NASA Lyndon B. Johnson Space Center Attn : Bob Derr/BJ33 2101 NASA Parkway Houston, TX 77058	CODE BJ33/JJF	7. ADMINISTERED BY (If other than Item 6) CODE	

8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State, and Zip Code)

**TO PROSPECTIVE OFFERORS**

Project: Building 16N, High Bay Roof

CODE	FACILITY CODE
9A. AMENDMENT OF SOLICITATION NO. NNJ05096224R	9B. DATED (SEE ITEM 11) April 7, 2005
10A. MODIFICATION OF CONTRACT/ORDER NO.	10B. DATED (SEE ITEM 13)

**11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS**

The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers  is extended,  is not. Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods:

(a) By completing Items 8 and 15, and returning  copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)  
N/A

**13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS, IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.(x)**

A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
d. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor  is not,  is required to sign this document and return \_\_\_\_\_ copies to the issuing office.

14. description of amendment/modification (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

See Page 2

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print)	16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) Frances B. Davidson, Contracting Officer
15B. CONTRACTOR/OFFEROR  (Signature of person authorized to sign)	15C. DATE SIGNED
16B. UNITED STATES OF AMERICA BY <i>Frances B. Davidson</i> (Signature of Contracting Officer)	16C. DATE SIGNED 5/25/05

### **Roofing IDIQ**

The purpose of this amendment is to:

1. Remove existing Specification Section 13999 and replace with the attached Specification, Section 13105, Fall Arrest and Fall Protection Systems (8 pages) (attachment 1).
2. Remove existing Specification, Section 01410, Contractor Safety and Health Program, and replace with the attached revised Specification, Section 01410, (22 pages)(attachment 2).
3. Add the attached New Specification, Section 07513, Modified Bitumen Roofing (2 pages)(attachment 3) to the specifications.
4. Sign in sheets (2 pages) for the Second Site Visit on May 5, 2005 are provided (attachment 4).
5. The performance period for this project shall be **210 calendar days** after Notice to Proceed as shown on Model Contract SF 1442, Block 11.
6. *The date for receipt of proposals is changed to June 16, 2005.* A follow on amendment will be issued shortly providing answers to questions.

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SECTION 13105

FALL ARREST AND FALL PROTECTION SYSTEMS

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this section to the extent referenced:

ASTM INTERNATIONAL (ASTM)

ASTM A 666 (2003) Standard Specification for Austenitic Stainless Steel Sheet, Strip, Plate and Flat Bar

AMERICAN STANDARDS INSTITUTE (ANSI)

ANSI Z359.1 (1992) American National Standards Safety Requirements for Personal Arrest Systems, Subsystems and Components

U. S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

29 CFR 1910 (2003) Occupational Safety and Health Standards

29 CFR 1926 (2003) Safety and Health Regulations for Construction

1.2 SUBMITTALS

The following shall be submitted in accordance with Section 01330, "Submittals," in sufficient detail to show full compliance with the specification:

SD-02 Shop Drawings

System Layout drawings for the roofs indicating the locations of all components in the system labeled for easy identification.

System Installation Drawings to show a complete fall arrest system to include details and coordination of system components and existing building systems along with any revision required to the existing facilities. Note any exceptions to post mounting Details.

Final As-built Layout and Installation Shop Drawings

SD-02 Shop Drawings

Equipment and Performance Data

Constant force posts

Energy absorbing devices (Shock Absorbers)

- End Anchors
- Dee-Rings
- Transfasteners
- Horizontal Lifeline Cable
- Turnbuckle
- Tension Indicator
- Threaded Swage
- Swage Slip Indicator
- Corner Assembly
- Lanyards
- Body harnesses

SD-03 Product Data

Manufacturer's Catalog Data indicating the sizes, descriptions, capacities, test certifications, and other descriptive data

- Constant force posts
- Energy absorbing devices (Shock Absorbers)
- End Anchors
- Dee-Rings
- Transfasteners
- Horizontal Lifeline Cable
- Turnbuckle
- Threaded Swage
- Swage Slip Indicator
- Corner Assembly
- Lanyards
- Body harnesses

SD-05 Design Data

Drawings to show a complete fall arrest system to include Design Analysis and Calculations certified by a Professional Engineer

- Testing Plans
- Training Plans

SD-06 Test Reports

- Manufacturer's Test
- Field Testing
- Laboratory Mock Ups

SD-07 Certificates

Manufacturer's Certificates indicating compliance with American National Standards Safety Requirements for Personal Arrest Systems, Subsystems and Components.

- Constant force posts
- Energy absorbing devices (Shock Absorbers)
- End Anchors
- Cable
- Dee-Rings
- Transfasteners
- Horizontal Lifeline Cable
- Turnbuckle
- Threaded Swage

Swage Slip Indicator  
Corner Assembly  
Lanyards  
Body harnesses

Manufacturer's Certification, indicating the training and authorization of installation personnel.

#### SD-08 Manufacturer's Instructions

Manufacturer's Instruction indicating the manufactures recommended method and sequence of installation shall be submitted for the Fall Arrest System to include:

Constant force posts  
Energy absorbing devices (Shock Absorbers)  
End Anchors  
Cable  
Dee-Rings  
Transfasteners  
Turnbuckle  
Threaded Swage  
Swage Slip Indicator  
Corner Assembly

### 1.3 GENERAL REQUIREMENTS

This section provided the minimum requirements for the design and installation of the Fall Arrest and Fall Protection Systems.

The Fall Arrest and Fall Protection Systems provided shall be as manufactured by Latchways "Mansafe" system Fall Arrest System. JSC has issued a sole-source justification to specify this manufacture and model. No other manufacture and model shall be substituted.

### 1.4 THE FALL ARREST AND FALL PROTECTION SYSTEMS DESIGN CRITERIA

The Fall Arrest and Fall Protection Systems provided shall serve as: 1. Personal Fall Arrest System as defined in 29 CFR 1910, Subpart F Standard Number 1910.66, Appendix C, Personal Fall Arrest System; 2. Fall Protection as defined in 29 CFR 1926, Subpart M, meeting the fall protection system criteria and practices for both a Personal Fall Arrest System (paragraph (d)) and Positioning device system (paragraph (e)).

The fall arrest and fall prevention systems, shall comply with the above referenced OSHA CFR 29 requirements and criteria for fall prevention systems and for fall arresting systems except as follows:

The OSHA requirement for the building attachments to withstand 5,000 pound force reaction per employee attached has been excepted and replaced with the following:

Anchorage to which personal fall arrest equipment is attached shall be capable of supporting at least 10,000 pounds force or shall be designed and installed as part of a complete personal fall arrest system.

The OSHA distance for one person falling to be limited to 3.5' is excepted and replaced with the following:

With a body harness we can arrest a falling person with 1800 lbf maximum. The body harness shall be attached to the lanyard at 4' above the roof in the middle of the persons back. This means that the person stands at the roof edge then steps off of the roof edge and free falls 4' before any fall arresting system deploys.

The lanyards for attaching the personnel to the safety cable shall have energy absorbing devices to limit the force exerted onto the body harness to 1800 lbf.

Design scenario for fall arrest protection:

One 300 lb person stepping off of the roof wearing a body harness attached with a lanyard to the safety anchor cable. The body harness shall be attached to the lanyard at 4' above the roof in the middle of the persons back. This means that the person will free fall 4' before any fall arresting system deploys.

Two 300 lb persons stepping off of the roof at the same time, with each person wearing a body harness attached to a lanyard to the safety anchor cable. The body harness shall be attached to the lanyard at 4' above the roof in the middle of the persons back. This means that both people will free fall 4' before any fall arresting system deploys.

The Fall Arrest and Fall Protection system will be designed for three (3) simultaneous users.

Provide a cable tension indicator that will allow each user to assure correct cable tension has been achieved and is maintained on the Horizontal Lifeline.

The Design Analysis with supporting computations shall accompany the Fall Arrest System design submittal for review and approval.

System shall be designed and certified by a registered professional engineer.

Support continuous life line horizontal cables from anchors attached directly to structure members or constant force posts.

#### 1.5 PROJECT CONDITIONS

Perform sight investigation, surveys, and field measurements prior to design to ensure required fit and dimensions.

Provide inline shock absorbers, turnbuckle, tension indicator, and three (3) Transfasteners in each cable section.

The system shall be designed and located to fully protect the user at all times in the area of potential fall hazard and to allow the user to connect prior to entering the potential fall area.

Location of the horizontal lifeline will be positioned at 7ft - 0 inch from the edge of the roof. All offsets for roof equipment obstruction will be designed to service the equipment and the maximum roof area without violating the 7 ft roof edge clearance, maintaining the criteria of 1926.502 (e) for Positioning Device Systems.

## 1.6 TESTING PLANS

Provide installation field test plans based on the designed systems. Test plans will be developed in accordance with OSHA 1910.66 Appendix C, Section II.

## 1.7 TRAINING PLANS

Provide operator training plans and Instructor Manually based on the designed systems to be conducted after system has been installed and field tested. Training will be for the building managers, operation & maintenance staff (users) and NASA safety personnel. Training plans will be developed in accordance with OSHA 1910.66 Appendix C, Section III.

## PART 2 PRODUCTS

### 2.1 MATERIALS

All materials shall be new. All exposed connectors, cables, and bolts shall be stainless steel: Marine grade A4 Stainless Steel bolts and Marine grade ASTM A 666, type 316S cable.

### 2.2 COMPONENTS

Components will meet the requirements of ANSI Z359.1 Requirements for Personal Arrest Systems, Subsystems and Components.

The complete fall arrest system components will be the product of one Manufacture as identified in the paragraph entitled GENERAL REQUIREMENTS of this section. Consisting of:

Constant force posts shall deploy with between 500 and 700 lbs force applied in any horizontal direction and to hold 2700 pounds force in any horizontal direction after deployment. This shall be accomplished without causing damage to the existing roof deck during deployment.

Energy absorbing devices (Shock Absorbers): Load limiting in-line shock absorber to 3,000 pounds force for multispan systems and 4,000 pounds force for single span systems. The shock absorber must visually display deployment in the event a load deployment has occurred.

End Anchors attached to structure: 316 S stainless steel with minimum breaking strength of 10,000 pounds-force lbf. (44.5 kilonewton kn)

Cable: Marine grade 316 S stainless steel

Swage Slip Indicator: Marine grade 316 S stainless steel and compatible wire threaded swage.

Dee-Rings: 316 S stainless steel with minimum tensile strength of 5,000 lbf (22.25 kn), tested to 3,600 pounds force (16 kn) without cracking, breaking or permanent deformation; and compatible with Trans fasteners for pass through of support posts without user disconnecting from system.

Threaded Swage: Marine grade 316 S stainless steel.

Removable Tran fasteners Stainless Steel cast components 17/ph cast a

and 316 S other steel components. Compatible with Dee Ring and Corner Assembly for pass through of support posts without user disconnecting from system.

Horizontal Lifeline Cable: Marine grade 316 S stainless steel wire rope 8mm 1 X 19 with a minimum strength of 10,000 lbf.

Corner Assembly: Sleeve and bracket assembly for 90 degree corner fabricated from 316 S stainless steel.

Turnbuckle: 316 S stainless steel with 10,000 pound force minimum breaking point and compatible with horizontal lifeline cable.

### 2.3 PERSONAL USE EQUIPMENT

Personal use equipment will meet ANSI Z359.1 Safety Requirements for Personal Arrest Systems, Subsystems and Components, OSHA 1926, and OSHA 1910

Lanyards - 1 per Body Harness

Body harnesses - 2 per Roof Opening (Hatch) or Exterior Access Point

### 2.4 TESTING

Two laboratory mock-ups of each typical constant force post installation shall be tested and certified by an independent testing laboratory to comply with the conditions on the drawings.

Provide Manufacturer's Test Reports from Factory Testing indicating compliance with American National Standards Safety Requirements for Personal Arrest Systems, Subsystems and Components.

### 2.5 CERTIFICATIONS

The strength, capacity, and performance of each item installed into the fall prevention system shall be UL listed and/or certified by an independent testing laboratory.

## PART 3 EXECUTION

### 3.1 GENERAL

The installation of systems and equipment can not begin until all designs and drawing have been approved and released for construction.

The Fall Arrest system will be installed only by approved personnel that have been authorized, trained and certified by the manufacturer.

The horizontal lifeline will be installed at 7 ft - 0 inch (plus or minus ½ inch) from the edge of the roof.

### 3.2 TRAINING

Provide operator training after system has been installed and field tested. Training will be for the building managers, operation & maintenance staff (users) will qualify the class of 20 personal to use the system as installed. Training on install systems will be accomplished in accordance with OSHA 1910.66 Appendix C, Section III (e), (d) and plans prepared in the paragraph entitled, TRAINING PLANS of this section.

### 3.3 FIELD TESTING

Testing of install systems will be accomplished in accordance with OSHA 1910.66 Appendix C, Section II "Testing Methods for PERSONAL Fall Arrest Systems" and plans prepared in the paragraph entitled, TESTING PLANS of this section.

### 3.4 FINAL ASBUILT SHOP DRAWINGS

Final Shop Drawings, reflecting the system as installed, will be submitted after testing and before acceptance of the work. Reproducible drawings will be submitted in accordance with Section 01330 SUBMITTALS, paragraph entitled, MARKING and CAD Drawing Format in accordance with Section 01330 SUBMITTALS, paragraph entitled, STATUS REPORT ON MATERIALS ORDERS, Performance Requirements for CAD Drawings Compatibility.

### 3.5 CERTIFICATIONS

Each separate fall arrest system installation shall be certified by a registered professional engineer.

-- End of Section --

REPLACE ROOFING SYSTEMS, BLDG. 16 NORTH

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SECTION 01410

CONTRACTOR SAFETY AND HEALTH PROGRAM

PART 1 GENERAL

1.1 SUMMARY

The requirements of this Section apply to, and are a component part of, each section of the specifications and requirements of the control package.

1.2 REFERENCES

The following publications form a part of these specifications to the extent indicated by their references. The exclusion of a publication from this section will not relieve the Contractor from complying with the publication reference elsewhere.

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (MARA)	
10 CFR 20	(2002) Standards for Protection Against Radiation
29 CFR 1910	(2001) Occupational Safety and Health Standards
29 CFR 1926	(2001) Safety and Health Regulations for Construction
NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)	
NFPA 30	(2003) Flammable and Combustible Liquids Code
JOHNSON SPACE CENTER	
JPG 1700.1	Johnson Space Center Safety and Health Handbook

1.3 SUBMITTALS

The following shall be submitted in accordance with Section 01330, 'Submittals' in sufficient detail to show full compliance with the specification:

50-01 Preconstruction Submittals

The Contractor shall submit the following items in accordance with the paragraph entitled, "Safety and Health Plan Requirements" of this section:

Contractor's General Safety and Health Plan

Contract Specific Safety and Health Plan

#### Subcontractor's Safety and Health Plans

The Contractor shall submit the following items in accordance with the paragraph entitled, "Proof of Training", of this specification:

Safety and Health Training Documentation for Asbestos and Lead Abatement Workers

Current medical examinations and respirator fit test for Asbestos and Lead Abatement workers, and all other employees involved in Respiratory Protection.

#### SD-02 Shop Drawings

The Contractor shall submit the following in accordance with the paragraph entitled, "Pre-Use Planning for Hazardous Operations" of this specification.

Pre-use plans  
Advanced Notification of Equipment

#### SD-03 Product Data

The Contractor shall submit the following in accordance with the paragraph entitled, "Hazard Communication Program" of this specification

Listing of all Hazardous Material  
Material Safety Data Sheets

#### SD-06 Test Reports

The Contractor shall submit the following items in accordance with the paragraph entitled, "Safety and Health Activity Reports" of this specification:

Safety and Health Activity reports

The Contractor shall submit the following items in accordance with the paragraph entitled, "Exposure Monitoring" of this specification:

Exposure Monitoring

#### SD-07 Certificates

The Contractor shall submit the following items in accordance with the paragraph entitled, "Radiation and Laser Safety" of this specification:

US Nuclear Regulatory Commission Licenses

### 1.4 SAFETY AND HEALTH PROGRAM GENERAL PROVISIONS

The Contractor shall take all reasonable safety and health measures in performing under this contract and shall submit safety and health plans for the Contracting Officer's approval. The Contractor is subject to: (1) all applicable federal, state, and local laws, regulations, ordinances, codes, and orders relating to safety and health in effect on the date of this contract; and (2) shall comply with safety and health standards, specifications, issuances, reporting requirements, and provisions in the current Johnson Space Center Safety and Health Handbook, JPG 1700.1. See

paragraph entitled, "Compliance Reference" of this section.

During the performance of work under this Contract, the Contractor shall comply with procedures prescribed for the control and safety of persons visiting the project site. The Contractor is responsible for his personnel and for familiarizing each of his subcontractors with safety and health requirements. The Contractor shall advise the Contracting Officer of any special safety restrictions established so that Government personnel can be notified of these restrictions.

Contracting Officer may, from time to time, notify the Contractor in writing of any noncompliance with the provisions of this specification and may specify corrective action to be taken. Further, the Contractor shall take or cause to be taken such other safety and health measures, as the Contracting Officer shall direct. The Contractor shall, after receipt of such notice, immediately take corrective action.

If the Contractor fails or refuses to institute prompt corrective action in accordance with the above, the Contracting Officer may invoke the provisions of the clause in the contract entitled "Stop Work, or may invoke whatever other rights are available to the Government under the terms and conditions of this contract or at common law, to remedy such failure or refusal to institute prompt corrective action.

The Contractor agrees that authorized Government representatives of the Contracting Officer shall have access to and the right to examine the sites or areas where work under this contract is being performed to determine the adequacy of the Contractor's safety and health measures under this specification.

The Contractor shall maintain copies of the Contractor's General Safety and Health Plan, the Contract Specific Safety and Health Plan, each Subcontractor's Safety and Health Plans, permits, Material Safety Data Sheets, and other Safety and Health Program documents on-site readily available for review by all employees, subcontractors, the Contracting Officer and the Government's safety and Health Representatives.

The Contractor shall ensure that each new employee receives safety and health orientation and that all employees are initially and regularly trained in job safety and health. The Contractor's personnel shall have undergone all OSHA required safety and health training applicable to this project. JSC specific safety and health training may be used to supplement required training but is not intended to replace minimum required OSHA training

#### 1.4.1 Meetings

After the Pre-Construction Conference, before start of construction, and prior to acceptance by the Government of the Safety and Health Plans, the Contractor shall meet with the Contracting Officer to discuss the Safety and Health Program. During this meeting, a mutual understanding of the Contractor's Safety and Health Program and how it integrates with the Johnson Space Center Safety and Health requirements shall be developed. Discussions will include hazard analyses, procedures, permits, emergencies, and other requirements.

The Contractor shall meet with the Contracting Officer in a preparatory phase meeting prior to each feature of work to discuss safety and health issues for that Feature of work. Discussions will include hazard analyses,

procedures, permits, emergencies, and other requirements.

There may be occasions when subsequent conferences/meetings may be called by either party to reconfirm mutual understandings, to discuss changes to the Contractor's Safety and Health Plans, and/or to address deficiencies in the Safety and Health Program or procedures which require corrective action.

The Contractor shall conduct Safety and Health meetings with all members of each crew of each subcontractor prior to the start of work. The meetings will discuss The Safety and Health Program, hazard analyses, procedures, the Hazard Communication Program, emergencies, training, and permits. Attendance will be recorded. The Contracting Officer shall be notified at least 48 hours in advance of the meeting.

The Contractor shall conduct Safety and Health meetings with his/her employees and each subcontractor's employees. These meetings, either brief "Tool Box" type or more lengthy, will be held not less than every 2 weeks, or more frequently if warranted. The meetings will discuss pertinent topics and issues. Attendance will be recorded. The Contracting Officer shall be notified at least 48 hours in advance of the meeting

The Contractor shall prepare the minutes of each meeting described in this section and furnish them to the Contracting Officer to become part of the contract file.

#### 1.4.2 Inspections

The Contractor shall implement, as a minimum, a four phase inspection system for all definable features of work, as follows:

##### 1.4.2.1 Preparatory Inspection

This shall be performed prior to beginning any definable feature of work. It shall include a review of contract requirements (with all personnel responsible for supervision of the work) Review of contract requirements shall include; a check to assure compliance for all specific requirements for the feature of work, a review of the appropriate activity hazards analysis, hazard abatement plans, and a discussion of procedures for controlling the safety of the work including repetitive deficiencies; examination of the work area to ascertain that all preliminary work has been completed. The Contracting Officer shall be notified at least 48 hours in advance of each preparatory inspection and such inspection shall be made a matter of record in the Contractor's safety documentation. Preparatory Inspections will be reconvened when and if changes in the work or crew occur.

##### 1.4.2.2 Initial Inspection

This shall be performed as soon as hazard abatement plan is in place for that particular feature of work. The inspection shall include examination of the physical implementation of safety and health contract requirements; a review of safety and health procedures, a review of compliance with the activity hazard analysis. The Contracting Officer shall be notified at least 24 hours in advance of the inspection and such inspection shall be made a matter of record in the Contractor's safety documentation. Initial inspections will be reconvened when and if changes in the work or crew occur.

#### 1.4.2.3 Follow-up Inspection

These shall be performed daily to assure continuing compliance with contract requirements until completion of the particular feature of work. Such inspection shall be made a matter of record in the Contractor's safety documentation.

#### 1.4.2.4 Weekly Inspections

The Contractors shall inspect the site at least weekly for hazards and failures in following safety, health, and environmental requirements and document any identified hazards in accordance with JPG 1700.1 Chapter 10.1 "Safety and health requirements for designing, constructing, and operating facilities," Chapter 2.4 Hazard Abatement, Chapter 2.5, "Routine Inspections," and Chapter 3.5 "Hazard Tracking".

#### 1.4.3 Safety and Health Activity Reports

These reports shall be on an acceptable form and shall include factual evidence that required safety and health activities have been performed. The original and one (1) copy of these reports shall be furnished to the Government daily within 24 hours after the date(s) covered by the report, except that reports need not be submitted for days on which no work is performed. One (1) report shall be prepared and submitted for every 7 days of no work and on the last day of a no work period. All calendar days shall be accounted for throughout the life of the contract. The first report following a day of no work shall be for that day only. Reports shall be signed and dated by the Safety and Health System Professional or Safety and Health System Specialist. The report shall include copies of reports prepared by all subordinate safety staff personnel. The reports will include, but not limited to the following:

Plans and permits submitted/furnished/approved

MSDS submitted.

Inspections performed with results and references to specification section or OSHA paragraph. The control phase should be identified (Preparatory, Initial, Follow-Up Completion, or Weekly) List all deficiencies noted along with corrective action taken or proposed.

Investigations of reported hazards, mishaps, close calls/near misses, and other safety and health related incidents with action taken to correct and to prevent recurrence.

List instructions given/received

#### 1.4.4 Inspection and Hazard Tracking Records

Contractor shall maintain on-site the records of each inspection performed throughout the life of the contract. Records shall include, but not be limited to, factual evidence that the required inspections or tests have been performed, including type and number of inspections, result of inspections, nature of defects, causes for rejection, proposed remedial action, and corrective action taken.

##### 1.4.4.1 Hazard Tracking System

The Contractor shall have a system for initiating and tracking hazard

elimination or control. The system must; (1) track all hazards identified through inspections, investigations, employee reports, surveys, etc. to completion and (2) include interim measures to protect employees and the environment from hazard while permanent action is in work.

#### 1.4.4.2 Hazard Tracking Records

The Contractor shall maintain hazard tracking records that tracks the hazards to closure in accordance with JFC 1700.1 Chapter 3.5 "Hazard Tracking". Records shall include at least the following information: Hazard Identified, when and where identified, actions(s) taken to correct the hazards (Abatement Plans) and when corrected.

#### 1.4.4.3 Hazard Abatement Plans

The Contractor shall record hazard correction to closure using abatement plans (also commonly referred to as action plans or corrective action plans) developed to address hazards found during hazard analyses, mishap investigations, close call investigations, inspections, surveys, and other similar activities where hazards are identified and analyzed.

#### 1.4.5 Mishap Investigation and Reporting

The Contractor will report immediately (within 24 hours) by telephone and by NASA Form 1627 (NASA Mishap Report) to the Contracting Officer all mishaps which fall into the categories:

Type A Mishaps causing death, damage to equipment or property equal to or greater than \$1 million.

Type B Mishaps causing permanent disability to one or more persons, or resulting in hospitalization (for other than observation) of five or more persons, or damage to equipment or property equal to or greater than \$250,000, but less than \$1 million.

Type C Mishaps causing an occupational injury or illness which results in a lost workday case or a restricted duty case or damage to equipment or property equal to \$25,000, but less than \$250,000.

Mission Failure Any event of such a nature that it prevents the accomplishment of a majority of the primary mission objectives.

Incident Mishaps causing injuries less than type C, injury to personnel (including first-aid cases) or property damage less than \$25,000, but greater than \$1,000.

Instructions for completion of the NASA Form 1627 are printed on the reverse of the form, Blocks 1-22, 27-28, and 33 are required to be filed with the Contracting Officer within 24 hours of the mishap.

The Contractor will investigate all such work related incidents or accidents to persons and property to the extent necessary to positively conclude what cause or causes resulted in said accident or incident. After the Contractor completes an investigation of the mishap and has developed a plan of corrective action, the Contractor will complete the rest of the NASA Form 1627 and submit it to the Contracting Officer or his/her representative and the Occupational Safety Team. If an investigation board is convened or will be convened, the supervisor or Safety Representative of the Contractor will complete the form as best as possible and forwards it

to the Contracting Officer or his/her representative and the Occupational Safety Team.

#### 1.4.6 Near Miss Investigation and Reporting

The Contractor will report immediately (within 24 hours) by telephone and by NASA Form 1627 (NASA Mishap Report) to the Contracting Officer or his/her representative and the Occupational Safety Team of any Near Miss/Close Call. A Near Miss/Close Call is defined as an unplanned occurrence in which there is no injury, equipment or property damage less than \$1,000, no interruption of productive work, but which has the potential for any of the Mishap categories shown in the paragraph entitled, "Mishap Investigation and Reporting" of this section. A Near Miss/Close Call may result from hazards or unsafe acts.

Instructions for completion of the NASA Form 1627 are printed on the reverse of the form, Blocks 1-22, 27-28, and 33 are required to be filed with the Contracting Officer within 24 hours of the mishap.

The Contractor will investigate all such Near Misses/Close Calls to persons and property to the extent necessary to positively conclude what cause or causes resulted in said Near Miss/Close Call. After the Contractor completes an investigation of the Near Miss/Close Call and has developed a plan of corrective action, the Contractor will complete the rest of the NASA Form 1627 and submit it to the Contracting Officer or his/her representative and the Occupational Safety Team.

#### 1.4.7 Form JF288 "Statistical Information"

Contractor will provide a Johnson Space Center Form JF288, Statistical Information Contractor Safety and Health Program, to the Contracting Officer each month during the contract period and also at the end of the contract.

#### 1.4.8 Clearance of Roadways

The Contractor shall keep clear for traffic at least one-half of any roadway involved in his operations, and any such road clearance shall be adequate for not less than one-way traffic.

#### 1.4.9 Protection From Injurious Dirt and Dust

The contractor shall protect existing structures, machinery and equipment from injurious dirt and dust from the construction operations at all times. Rubbish and flammable material shall be removed at once.

#### 1.4.10 Hydrostatic or Other Special Testing

Where hydrostatic or other special testing above 25 psig is required under the Contract, the Contractor shall submit for approval a complete and detailed testing procedure and shall not undertake any such testing until the procedure has been approved.

### 1.5 SAFETY AND HEALTH PLAN REQUIREMENTS

#### 1.5.1 Contractor's General Safety and Health Plan

The Contractor shall submit a current, comprehensive, written General Safety and Health Plan describing the Contractor's overall Safety and

Health Program. The General Safety and Health Plan shall be submitted and approved prior to work activities being started. The General Safety and Health Plan shall contain the following items at a minimum:

Safety and Health Policy of the corporation/company signed by the firm's CEO, President, Owner, or other senior executive

Purpose and Scope of the Safety and Health Program

Management Leadership Commitment and Employee Involvement in the Safety and Health Program

Responsibilities of participants in the Safety and Health Program

Managers

Supervisors

Employees

Safety and Health Manager

Training Coordinator

Process for Work Site Analysis/Job Hazard Analysis/Job Safety Analysis

Process for reporting hazards and Close Calls/Near Misses and mishaps within the company structure

Process for investigating reported hazards, mishaps and close calls/near misses within the company

Processes for hazard identification, prevention, and control as applicable:

Inspections and Surveys

Exposure monitoring (chemical, noise, radiation)

Asbestos Program

Lead and Heavy Metal Exposures

Confined Space Entry Program

Hearing Conservation Program

Written Hazard Communication Program

Written Respiratory Protection Program

Personal Protective Equipment

Energy Control and Lockout/Tagout

Welding and Cutting Program

Fall Protection Program

Crane Operations and Heavy Lifting

Material Handling Program

Scaffolding and Ladder Safety

Excavations and Trenches

Concrete and Masonry Program

Motor Vehicle and Heavy Equipment Operation

Demolition

Other construction activities applicable to the firm Safety and Health Training Requirements

New Employee Orientation

Initial and refresher training all employees must receive

Initial and refresher training specific to on-the-job hazards and activities

Safety and Health Program Requirements for subcontractors

#### 1.5.2 Contract Specific Safety and Health Plan

The Contractor shall submit a comprehensive, written Contract Specific Safety and Health Plan describing how the Contractor's General Safety and Health Program will be tailored to the activities on this contract at Johnson Space Center. The Contract Specific Safety and Health Plan shall be submitted and approved prior to work activities being started. The Contract Specific Safety and Health Plan shall contain the following items at a minimum:

Names of:

The Safety & Health System Specialist (SHSS) Provide a resume listing this individual's education, work experience and training in occupational safety and health topics.

The Safety & Health System Professional (SHSP) .if applicable. Provide a resume listing this individual's education, work experience, and training in occupational safety and health topics.

The appropriate "Competent Person" for specific activities. A "Competent Person" must be named for confined space entry, asbestos work, lead abatement, scaffolding, assured grounding, ionizing radiation, rigging equipment, fall protection, excavations, steel erection, and other construction activities as required by OSHA. Provide documentation of each person's competency. These names may be provided at the beginning of each construction feature of work.

Job Hazard Analysis (JHA) specific to the construction activities with identified hazard controls and PPE.

Standardized company procedures that incorporate recognized controls for the protection of personnel and property.

The contractor should include any standardized procedures written for activities to describe how the contractor's employees will perform that activity or use equipment.

Recognized controls include the use of: fixed, rigid and flexible barricades, warnings, limited access signs, personal protective equipment, work practices, shielding, lockout/tagout, and inspections,

Ground Fault Protection Program

Safety and Health Training that employees will receive before beginning work at JSC and a description of how the training will be documented.

Procedures for hazardous material spill/release at JSC

Emergency procedures in the event of a fire, personnel injury, and property damage at JSC.

Hazard Communication Program to include location where Material Safety Data Sheets will be kept at the job site.

Written Respiratory Protection Program, if applicable.

Frequency and location of Safety and Health meetings.

Compliance, Enforcement, and Disciplinary actions.

Description of methods and procedures to assure compliance with the Safety and Health Plan by employees and subcontractors.

Description of methods and procedures to enforce safety and health requirements with his employees and the subcontractor's employees.

Description of methods and procedures for the discipline of employees (both his and subcontractors') for violations of the safety and health plans.

Description of methods and procedures for award and reward of employees (both his and subcontractors') for outstanding implementation and compliance of the safety and health plans.

Drug Free Workplace Program

Visitor Protection and Control Program

Safety barricades, signs, and signal lights

Safeguard the public and Government personnel, exposed to operations and activities

### 1.5.3 Subcontractor Safety and Health Plans

The Contractor shall submit detailed, written Subcontractor Safety and Health Plans as described below. Each subcontractor's plan shall be specific to the activities at Johnson Space Center. The Subcontractor

Safety and Health Plans shall be submitted and approved by the Contracting Officer prior to subcontractor work activities being started. The requirements for Subcontractor Safety and Health Plans are:

1. Subcontractors may elect to provide their own Safety and Health Plan. A Subcontractor's Safety and Health Plan shall be a combination of all applicable topics as described in the general and contract-specific plans from paragraphs entitled, "Contractor's General Safety and Health Plan" and "Contract Specific Safety and Health Plan" of this section.
2. Except as listed in the following paragraphs 3 through 7 subcontractors may elect to participate in and be covered by the Prime contractor's Safety and Health Program.

A senior executive of the subcontractor's firm must sign a statement that they will participate in the prime contractor's program. A copy of this document must be submitted with the prime Contractor's Contract Specific Safety and Health Plan

The prime contractor will then be responsible for: the safety and health of the subcontractor's employees, providing and documenting all safety and health training for the subcontractor's employees, ensuring compliance with all work practices and JHAs, obtaining permits for all hazardous work performed by the subcontractor, and other safety and health issues affecting the subcontractor's employees on this contract.

3. Subcontractors performing asbestos related work at NASA JSC must provide their firm's Safety and Health Plan in accordance with paragraph 1 above. This plan must discuss work procedures, provide a written Hazard Communication Program, and provide a written Respiratory Protection Program. This plan must demonstrate compliance with 29 CFR 1926.1101, 29 CFR 1910.134, and JPC 1700.1 Part 12 Asbestos Control Requirements. The Contracting Officer will approve this written document before the subcontractor is allowed to perform asbestos work at JSC.
4. Subcontractors who require the use of respiratory protection, or voluntarily allow it to be worn, must provide a written Respiratory Protection Program demonstrating compliance with 29 CFR 1910.134. The Contracting Officer will approve this written document before the subcontractor is allowed to perform work at JSC.
5. Subcontractors performing work with lead-containing materials at NASA JSC must provide a written plan demonstrating their compliance with 29 CFR 1926.62. The Contracting Officer will approve this written document before the subcontractor is allowed to perform work at JSC.
6. Subcontractors performing leading edge work; or working on scaffolds, roofs, steel structures; or working at unprotected heights above 6 feet must provide must provide a written fall protection plan demonstrating compliance with 29 CFR 1926 Subparts L, M, R, and X as applicable.
7. Subcontractors performing work on energized systems (electrical,

hydraulic, kinetic, mechanical, pressurized, etc) must provide a written plan demonstrating compliance with isolation and lockout/tagout (LOTO) requirements of 29 CFR 1910.147 and JPG 1700.1 Chapter 8.2.

#### 1.5.4 Changes to Safety and Health Plans

After acceptance of the Safety and Health Plans, the Contractor shall notify the Contracting Officer in writing a minimum of seven (7) calendar days prior to any proposed change. Proposed changes must be submitted to the Contracting Officer for approval.

#### 1.6 SAFETY AND HEALTH SYSTEM ORGANIZATION REQUIREMENTS

The Contractor shall identify a Safety & Health System Specialist (SHSS) who shall be responsible for the implementation of Safety and Health requirements. This individual shall be on-site at all times during construction.

The Contractor shall provide a Safety & Health staff at the work site at all times during progress with complete authority to take any action necessary to ensure compliance with the Safety & Health Contract requirements. All Safety & Health personnel shall be subject to acceptance by the Contracting Officer. The following are considered minimum requirements and should be supplemented as necessary to assure adequate staff to meet the Safety & Health requirements at all times during construction.

##### 1.6.1 Safety & Health System Specialist (SHSS)

The Contractor shall identify an individual, within his organization at the work site, who shall be responsible for the overall Safety & Health System and have the authority to act in all Safety & Health matters for the Contractor. The SHSS shall report directly to the site management authority or upper management in the Contractor's off-site organization. This SHSS shall be on-site at all times during construction, unless an alternate for the Safety & Health System Specialist is identified in the Plan to serve in the event of the Safety & Health System Specialist absence. The SHSS will not be absent from the work site for periods exceeding 1 week at any time, and not more than 20 workdays during a calendar year. The requirements for the alternate shall be the same as for the designated Safety & Health System Specialist.

##### 1.6.2 Safety & Health System Staff

The Contractor shall provide as part of the Safety & Health System organization, as a minimum, specialized personnel for each definable feature of work (see Section 01451 Contractor Quality Control). These personnel shall assist and report to the SHSS. Each person will be responsible for assuring the Safety & Health complies with the Safety & Health requirements for their area of specialization. These individuals shall be responsible to the SHSS; be physically present at the construction site during work on their areas of responsibility; have the necessary education and experience in Safety & Health System compliance in those areas. A staff shall be maintained under the direction of the SHSS to perform all Safety & Health activities. The staff must be of sufficient number to ensure adequate Safety & Health System coverage for all features of work, crafts, work shifts, and work crews involved in the construction. These personnel may perform other duties, but must be fully qualified by

experience and technical training to perform their assigned Safety & Health responsibilities and must be allowed sufficient time to carry out these responsibilities. The Safety & Health Plan will clearly state the duties and responsibilities of each staff member.

## 1.7 Special Safety and Health Program Requirements

### 1.7.1 Job Hazard Analyses/Job Safety Analyses (JHA5/JSAS)

Identify hazardous operations as defined in JPG 1700.1. Chapters 10.1 and 5.8.

Identify safety and health hazards associated with construction activities

Prepare and submit Hazard Abatement procedures and controls for each activity or identified hazardous operation in accordance with JPG 1700.1, Chapter 2.4.

Workers shall review the relevant JHA5 before task initiation.

The JHAs shall be updated as conditions change

### 1.7.2 Pre-use Planning for Hazardous Operations

The Contractor shall submit the following information relating to hazardous operations and the equipment used in those operations requiring a pre-use inspection.

Pre-use plans, drawings, or sketches for crane lifting/rigging, working under suspended loads, scaffold erection, fall protection, excavations and trenching, blocking, and demolition.

Advanced notification of equipment to be used on-site, which requires pre-use inspections, must be made at least 48 hours prior to intended use. Advance notification is required for scaffolding, lifting, blocking, fall protection, and mechanized equipment.

The Contractor shall complete Johnson Space Center Forms JFB, Hazardous Operation Permit, or JF 1475, Hot Work Welding Cutting Permit, for operations as described in JPG 1700.1, Chapters 5.8 and 8.4. These permits are required for activities involving welding, torch cutting, operating a crane, applying pesticides, working with high voltage electricity, operating aerial lift buckets or truck platforms, operating Class 3A or 3B or 4 lasers, using radioactive materials, using industrial x-ray machine, and handling cryogenic materials. These forms shall be provided to the appropriate JSC office for approval and issue of permit prior to the start of the operation.

### 1.7.3 Emergency Response

The emergency telephone numbers for use at JSC will be posted in a readily visible location.

The contractor shall exercise his emergency procedures for fire, personnel injury, and property damage within the first 60 calendar days of the notice to proceed and at least annually thereafter.

All fires and all accidents requiring medical response will be reported immediately by telephone to the JSC Emergency Operations Center (EOC) at

281-483-3333.

#### 1.7.4 Minimum Construction Safety Training

JSC 0.5-hour Orientation to Safety and Health at Johnson Space Center for all employees prior to issuance of site access badge.

HASC 4.5-hour General Safety, Health, and Hazard Recognition .“Basic Orientation Plus” for all employees prior to issuance of site access badge. Valid for 2 years.

HASC 1.5 hours JSC Site Specific Safety and Health Awareness for all employees prior to issuance of site access badge. Valid for 2 years.

OSHA 10-hour 29 CFR 1926 Construction Industry Safety Training (craft specific) for all first line supervisors (i.e. foremen, crew chiefs) and employees designated as a “competent person.” Valid for 4 years.

OSHA 30-hour 29 CFR 1926 Construction Industry Safety Training for all project managers, superintendents, supervisors and the SHSS. Valid for 4 years.

JSC 3 hour Confined Space Training for employees prior to entering a Confined Space and first line supervisor, project managers, superintendents, competent person, and the SHSS. Valid for 2 years.

JSC 4 hour LO/TO Training for exposed employees, first line supervisor, project managers, superintendents, competent person, and the SHSS. Valid for 2 years.

JSC 6 hour Asbestos Class III O&M (Restricted) if do Class III asbestos work. Initial plus annual 2 hour refresher.

OSHA Asbestos training as required by JPG 1700.1, Part 12 if do Class I/II/III work. Initial plus annual refresher.

#### 1.7.5 Approved Training Sources

JSC offers onsite S&H training on a pre-established schedule basis that will be made available. Courses listed above may also be obtained from the Houston Area Safety Council (HASC) or other Safety Council that is listed as a member in good standing with the “Association of Reciprocal Safety Councils, Inc. (ARSCI)

#### 1.7.6 Proof of Training

Employees shall maintain evidence that the required training has been completed and is current prior to working on the jobsite. Acceptable evidence of training:

Badge from HASC or ARSCI.

Card(s) issued by JSC.

OSHA Card showing course topic signed by an OSHA certified trainer.

#### 1.7.7 Training Documentation

The Contractor shall submit documents showing that employees performing any

OSHA Class I/Class II/Class III asbestos work at JSC have received the training required by JPC 1700.1, Part 12, Asbestos Control Requirements. A copy of a current Texas Department of Health (TDH) Asbestos Worker License or a current TDH Asbestos Supervisor License is sufficient documentation of training for OSHA Class I and Class II work. These documents shall be submitted to the Contracting Officer for review prior to start of any asbestos related work.

The Contractor shall submit documents showing that employees performing any OSHA Class I/Class II/Class III asbestos work at JSC have a current medical examination and a current respirator fit test.

The Contractor shall submit documents showing that employees performing Lead Abatement Work are trained to the requirements of OSHA Standard 29 CFR 1926.62 and have a current respirator fit test. A copy of a current TDH Lead Abatement Worker License is sufficient documentation of training. These documents shall be submitted to the Contracting Officer for review prior to start of any lead abatement work.

Documentation of Asbestos Training, Lead Abatement Training, and all other required Safety and Health Training shall be maintained on-site by Contractor and shall be made available for review by the Contracting Officer.

#### 1.7.8 Hazard Communication Program

The Contractor shall have a written Hazard Communication Program meeting the requirements of OSHA Standard 29 CFR 1910.1200.

Provide a listing of all hazardous material to be used on the contract and a Material Safety Data Sheet (MSDS) for each item on the list. Current lists and MSDS shall be provided prior to each Construction Feature of Work.

The Contractor shall submit MSDS5 using a NASA/Johnson Space Center Form, JF 277, Request for Material Safety Data Sheets Processing, for inclusion in the JSC MSDS Database as required by JPC 1700.1, Chapters 9.1 and 9.2. The MSDSs must be accepted before the hazardous material is brought on-site.

The Contractor shall maintain at the contract job site a copy of the hazardous material list(s) and an MSDS for each hazardous material used during the life of the contract.

The Contractor shall ensure that each subcontractor is covered by a Hazard Communication Program

#### 1.7.9 Exposure Monitoring

The Contractor shall conduct any personnel exposure monitoring required for work involving airborne inhalation exposures to hazardous materials.

Contractor shall submit copies of exposure monitoring results, along with an explanation of the operation monitored, to the Contracting Officer.

The Government's Safety and Health representatives may conduct personnel or environmental exposure monitoring to verify the adequacy of work procedures. Exposure monitoring may be conducted for exposures to asbestos, lead, and other hazardous chemicals. The Government will furnish the contractor the personnel exposure monitoring results. The Government's air monitoring is for the governments use only and is not intended to

replace the use of proper safety and health procedures when working with hazardous materials.

#### 1.7.10 Asbestos

##### 1.7.10.1 Existing Asbestos Materials

Existing Asbestos Materials may be found in and on, but not limited to, areas above suspended ceilings, mechanical rooms, and below raised computer flooring. Asbestos containing materials (ACM) are known to exist in spray-applied insulation and fireproofing, sprayed or troweled acoustical ceilings, pipe and boiler insulation, ceiling tiles, and floor tiles. Asbestos dust and debris (contamination) have been found to exist in facilities where there is no visible deterioration of known ACM products. See Section 01220, "Special Requirements" to determine if asbestos is expected to be found and/or removed as part of this project. Specific requirements for the handling of asbestos are also addressed in Section 01220.

##### 1.7.10.2 New Asbestos Materials

Asbestos materials and products containing asbestos in any form shall not be used, specified, or installed without the express, advanced written consent or direction of the Contracting Officer. In the event of any inconsistency between this specification and any other contract specification, this specification shall apply.

##### 1.7.10.3 Asbestos Related Work

Contractors performing any work involving asbestos must follow the criteria in the JSC Safety and Health Handbook, JPC 1700.1 (latest version), Part 12, Asbestos Control Requirements.

#### 1.7.11 Lead Containing Materials

Lead containing materials may be found at Johnson Space Center on structures, metal siding and decking, door frames, hand rails, and other building system components. Additionally, lead sheeting may be found in roof drains. See Section 01220, "Special Requirements" to determine if leaded paint or other lead containing materials are expected to be found and/or removed as part of this project. Specific requirements for the handling of lead are also addressed in Section 01220.

Contractors performing any work involving the abatement of leaded paints and other lead containing materials shall follow the criteria in the OSHA Standard 29 CFR 1926.62. Activities which sand, grind, drill, or burn lead containing paints may cause exposures which exceed OSHA criteria.

Where possible "peel-away" chemical strippers should be used to remove lead containing paints from metal structures, siding, decking, and other metal building components before sanding, grinding, drilling, cutting, welding or torching. The paint shall be removed for a distance of at least six (6) inches on either side of the cut line or area to be worked. If welding or torching, paint shall be removed on all sides of the component.

#### 1.7.12 Noise

The Contractor shall ensure that employees using or working around equipment that produces continuous noise greater than 85 decibels on the

A-weighted scale (dBA) wear hearing protection regardless of the duration of exposure.

The Contractor shall ensure that employees using or working around equipment that produces impact/impulse noise greater than 100 decibels peak sound pressure (dBp) wear hearing protection.

The Contractor shall identify hazardous noise areas where hearing protection is required to be worn.

The Contractor shall ensure that employees are instructed on the proper method for inserting ear plugs and wearing aural "ear muff" protectors.

The Contractor shall provide hearing protection to any visitor entering a hazardous noise area.

#### 1.7.13 Confined Spaces

Contractor will complete a Johnson Space Center Form JF992, Confined Space Entry Procedure, for each confined space. The Contractor will provide the JF992 for approval before any entry/entries are made to any designated JSC-Permit or OSHA Permit space. Requirements for confined space entry at JSC are found in JPG 1700.1, Chapter 6.10

The Contractor will complete a Johnson Space Center Form JF1476, Confined Space Entry Permit, upon each entry into a confined space and retain completed JFs 1476 on site for review and inspection by the Contracting Officer.

#### 1.7.14 Radiation and Laser Safety

Radiographs shall be performed in an approved manner and in presence of an approved source handler. Prior to bringing any radiograph equipment on the JSC Site, the Contractor shall obtain written approval from the Contracting Officer of the procedure and type and size of radioactive source to be used, plus date and time of testing. No testing shall be performed without a JSC Form 8, Hazardous Operations Permit and presence of the inspector. Approval to perform radiography at other than normal working hours will be granted only when such work introduces hazards to other personnel working in the vicinity of the testing

Any Contractor who brings radioactive material, radiographic equipment, or an x-ray generator onto Johnson Space Center shall submit a copy of their State Agreement License or US Nuclear Regulatory Commission Licenses (See reference standard 10 CFR 20) to the Contracting Officer prior to the material or device arrival on JSC property.

The use of Class 2, 3 and 4 lasers must be approved by the Contracting Officer before the device is brought onto JSC property. A Hazardous Operations Permit, JSC Form 8, will be submitted for the use of Class 3 and 4 lasers.

#### 1.7.15 Respiratory Protection

Employees wearing tight-fitting face-piece respirators, whether required or voluntary, must show proof of current medical clearance, fit testing, and training.

Contractors and subcontractors allowing employees to voluntarily use

filtering face pieces (i.e., dust masks), must provide those employees with training in accordance with 29 CFR 1910.134.

#### 1.7.16 Lockout/Tagout (LO/TO) and Energy Control

The Contractor shall follow the requirements of JPC 1700.1, Chapter 8.2 for the control of energy (e.g.; electrical, air, steam, or fluid driven mechanisms)

JSC will provide the Contractor with locks to perform lock out for energy control. The Contractor will use the JSC Forms JF 19A and JF 1291A for tag out.

#### 1.7.17 Welding, Burning or Torch Cutting Work

The Contractor must ensure that safety precautions are in effect before, and maintained during the performance of all such work. Personnel and property must be protected from flash burns and sparks. The Contractor shall see that each employee performing such work is thoroughly familiar with all safety requirements.

The operation of all welding, burning, and torch cutting equipment will be checked and approved by a competent person. Any defective equipment shall be put in safe operating condition immediately or removed from the site.

Tarpaulins used for covers or shields must be fire resistant.

Shields must be used wherever possible. Where shields cannot be used, the area must be specifically approved by the Contracting Officer.

An approved fire extinguisher, with the Contractor's name or label on it, is a must requirement with each welding, burning or torch cutting operation. Operation is defined as one or more outfits operating in the same confined area.

The Contractor will complete and provide a JSC Form 1475, Hot Work Welding Cutting Permit, to the appropriate JSC office for approval and issue of permit prior to the start of any welding, burning or torch cutting operation.

#### 1.7.18 Open Flames

The use of open-flame heating devices will not be allowed except by special permission of the Contracting Officer. Such permission will not be granted unless the Contractor has taken all reasonable precautions to make such devices safe to include proper venting. Burning trash, brush, or trees on the job site will not be allowed. Approval for the use of open fires and open-flame heating devices will in no way relieve the Contractor from the responsibility of any damage incurred because of fires.

#### 1.7.19 Flammable Materials

Flammable liquids shall be stored and handled in accordance with NFPA 30, Flammable and Combustible Liquids Code of the National Fire Protection Association.

1.7.20 Fire Extinguishers

The Contractor shall provide a sufficient number of fire extinguishers on site to meet the requirements of 29 CFR 1926.150.

Each fire extinguisher shall be marked or tagged with the Contractor's name. Each extinguisher shall be inspected at least once per month. The inspection will be documented and defective equipment will be replaced immediately.

1.7.21 Severe Storm Warnings

The Contractor shall not perform outdoor construction activities when lightning is within 5 miles of the Center.

1.7.22 Drug Free Workplace Program

The contractor must provide a Drug Free Workplace Program that:

1. Contains a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition;
2. Establishes an ongoing drug-free awareness program to inform employees about:
  - The dangers of drug abuse in the workplace,
  - The policy of maintaining a drug-free workplace,
  - Any available drug counseling, rehabilitation, and employee assistance programs,
  - The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace.
3. Provides all employees engaged in performance of the contract with a copy of the above statement.
4. Notifies employees in writing in the statement required above that, as a condition of continued employment on this contract, the employee will:
  - Abide by the terms of the statement
  - Notify the employer in writing of the employee's conviction under a criminal drug statute for a violation occurring in the workplace no later than 5 days after such conviction
5. Notifies the Contracting Officer in writing within 10 days after receiving this notice of conviction, from an employee or otherwise receiving actual notice of such conviction. The notice shall include the position title of the employee.
6. Within 30 days after receiving notice of a conviction, take one of the following actions with respect to any employee who is convicted of a drug abuse violation occurring in the workplace:

Taking appropriate personnel action against such employee, up to and including termination; or

Require such employee to satisfactorily participate in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency; and

7. Make a good faith effort to maintain a drug-free workplace through implementation of paragraphs 1) through 6)
8. A "Controlled substance" means a controlled substance in schedules I through V of section 202 of the Controlled Substances Act (21 U.S.C. 812) and as further defined in regulation at 21 CFR 1308.11 .1308.15.

#### 1.7.23 Roofing

Flamed Asphalt re-heaters shall not be allowed on building roofs.

#### 1.7.24 Fall Protection

The Contractor shall ensure that any employee working at heights greater than six (6) feet above a lower level (ten (10) feet on scaffold) to include work on a ladder, is protected by a fall protection or fall prevention system.

Employees performing leading edge work shall be protected by a fall protection or fall prevention system.

The Contractor shall protect workers and visitors from falling objects.

#### PART 2 PRODUCTS

Not Used

#### PART 3 PARTS

Not Used

End of Section -

New Specification 07513      **Modified Bitumen Roofing**

Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

The Garland Company, Inc.  
Johns Manville International Company  
Tremco Incorporated

A. Thickness:

Granulated cap sheet: Minimum 150 mils  
Smooth surfaced secondary membrane: Minimum 100 mils

Tensile tear strength:

Granulated cap sheet: Minimum of 700 lbs./in.  
Smooth surfaced secondary membrane: Minimum of 100 lbs./in.

Elongation:

Granulated cap sheet: 4% to 6%  
Smooth surfaced secondary membrane: Maximum of 35%

Low Temperature Flexibility:

Granulated cap sheet: Minimum of -15 degrees F  
Smooth surfaced secondary membrane: Minimum of -5 degrees F

B. Roof Membrane Assemblies

Bottom ply of membrane shall be a smooth surface, SBS modified asphalt sheet with polyester or composite polyester/glass-fiber or fiberglass reinforcement. Product must meet or exceed ASTM D 6162 Type III, Grade S or ASTM D 6163, Type III, Grade S or ASTM D 6164, Type II, Grade S.

Top ply of membrane shall be a fire resistant, granulated surface, SBS modified asphalt sheet with polyester or composite polyester/glass-fiber reinforcement. Product must meet or exceed ASTM D 6162, Type III, Grade G or ASTM D 6164, Type III, Grade G

The Garland Company

1. Bottom Ply: HRP Tribase Plus
2. Top Ply: Stressply "E" FR Mineral

Johns Manville International Company

1. Bottom Ply: DynaLastic 180S
2. Top Ply: Dynamax FR Plus Granulated

Tremco Incorporated:

1. Bottom Ply: Powerply HD Base Sheet
2. Top Ply: Powerply Supreme FR Granulated.

C. Breaking Strength  
Minimum 44 lbf/in.

Mass of Roofing min; 55 lbs/100 square feet

Mass of Desaturated Glass Mat min; 1.7 lbs/100 square feet

Mass of Asphalt min; 12 lbs/100 square feet

Mass of Total Unstabilized Coating, Filler, and Top Surfacing min; 22 lbs/100 square feet

Mass of Mineral Granules Retained on a #70 Sieve min; 8 lbs/100 square feet

2.4.1 Venting Base Sheet Materials

Use manufacturers vented base sheet over new or existing lightweight insulating concrete.

D. 2.5.1 Flashing Sheet

Bottom ply of membrane shall be a smooth surface, SBS modified asphalt sheet with polyester or composite polyester/glass-fiber or fiberglass reinforcement. Product must meet or exceed ASTM D 6162, Type III, Grade S or ASTM D 6163, Type III, Grade S or ASTM D 6164, Type II, Grade S

Top ply of membrane shall be a fire resistant, granulated surface, SBS modified asphalt sheet with polyester or composite polyester/glass-fiber reinforcement. Product must meet or exceed ASTM D 6162, Type III, Grade G or ASTM D 6164, Type III, Grade G.

The Garland Company

1. Bottom Ply: HPR Tribase Plus
2. Top Ply: Stressply "E" FR Mineral

Johns Manville International Company

1. Bottom Ply: DynaLastic 180S
2. Top Ply: Dynamax FR Plus Granulated

Tremco Incorporated

1. Bottom Ply: Powerply HD Base Sheet
2. Top Ply: Powerply Supreme FR Granulated

MEETING ATTENDANCE SHEET

MEETING: IDIQ AMENDMENT FOR ROOFING REPAIR & REHAB

DATE: May 05, 2005

PROJECT: RFPNJ05096224R B-16N

PLEASE PRINT

NAME	COMPANY	MAIL CODE	PHONE NUMBER
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<i>[Signature]</i>	<u>TABCOR</u>		<u>480-648-7668</u>
<u>Dr. P. Healy</u> <u>Arthur Maden</u>	<u>Truman</u> <u>Amigo</u>		<u>210-823-8079</u>
<u>Jose Balade</u>	<u>JESSE Bolado</u>		<u>(910) 925-8079</u>
<u>Larry Mumm</u>	<u>Larry Mumm</u>		<u>(210) 834-3649</u>
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<u>MARTIN RILEY</u>	<u>American Roofing</u>		<u>210-224-5463</u>
<u>Dilly Stigler</u>	<u>Blinkman</u>		<u>281-486-1680</u>
<u>Ken Simmons</u>	<u>DK Hancey</u>		<u>817-546-2266</u>
<u>Chris Badden</u>	<u>Chris Badden</u>		<u>713-665-3102</u>
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<u>Jody [Signature]</u>	<u>TODD HANDELINC/BRAND Scaffold</u>		<u>913-475-0022</u>
<u>5 [Signature]</u>	<u>Competition</u>		<u>713-937-770</u>
<u>Michael [Signature]</u>	<u>Boston Roofing (Paul Davis)</u>		<u>210-854-6917</u>
<u>Alex Guevri</u>			
<u>Carl Gunn</u>	<u>Galiardo Roofing</u>		<u>(325) 947-3119</u>
<u>Mark Rusch</u>	<u>Tri-Lam Company</u>		<u>210-531-9966</u>
<u>ALFRED Arteaga</u>	<u>SIA Construction</u>		<u>281-325-5721</u>
<u>William Arteaga</u>	<u>ACCI</u>		<u>281-535-1065</u>

Pre Proposal Conference (Second)  
 Roofing IDIQ  
 Building 16N, High Bay  
 Solicitation NNJ05096224R

Thursday, May 5, 2005 9:00am Building 111

NAME	COMPANY NAME & MAIL CODE	TELEPHONE #
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