

SPECIFICATIONS  
FOR  
POTABLE WATER SYSTEM UPGRADES  
12G00-G020  
SEPTEMBER 2011

ISSUED/CEF  
SEP 27 2011

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(b)(6)

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9/16/11

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## REVISION PAGE

REV. NO. 1

PAGE	DESCRIPTION	APPROVAL
Page 11	Section 33 11 00 WATER DISTRIBUTION Subpart 3.1.3 Disinfection Added verbiage to second paragraph after fourth sentence "Documentation of a satisfactory bacteriological sample result shall include the statement "No Coliform Present".	<div data-bbox="1209 415 1299 577"><p>(b)(6)</p><p>2/21/12</p></div> <div data-bbox="1209 577 1347 630"><p>2/24/12</p></div> <div data-bbox="1209 619 1347 714"><p>(b)(6)</p></div> <div data-bbox="1209 714 1399 766"><p>2/28/12</p></div> <div data-bbox="1209 756 1388 892"><p>(b)(6)</p></div> <div data-bbox="1209 892 1339 945"><p>3/1</p></div>

ISSUED CEF. MAR 13 2012

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SEPTEMBER 2011

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION  
JOHN C. STENNIS SPACE CENTER  
SSC, MISSISSIPPI 39529

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## SECTION 01 11 00

## SUMMARY OF WORK

## PART 1 GENERAL

## 1.1 SUMMARY

The work to be performed under this project consists of providing the labor, equipment, and materials to install replacement potable water main transmission pipe, connections to service branches, associated accoutrements, and complete associated tasks in accordance with all contract documents at the Stennis Space Center, Mississippi. Work locations are several narrow corridors extending across a large portion of the facility. Locations for new pipe and accoutrement installation are adjacent to multiple roadway segments including Trent Lott Parkway, Saturn Drive, Road H, Endeavour Boulevard, Road J, Balch Boulevard, and Propellant Drive. Additional work locations include a utility corridor extending from the east end of Road J to Propellant Drive and a utility corridor extending from the Road J / Propellant Drive corridor to a location north of Building 3203, known as the National Data Buoy Center. Majority of pipe shall be 12 inch and larger nominal diameter high density polyethylene DR 17 and DR 11 installed by open excavation, jack and bore, and horizontal directional drilling methods as defined on drawings.

The work contained in contract drawings and these specifications involves a lump sum Base Bid and, if funding allows, some or all of four (4) lump sum Additive Bid Items.

The Base Bid will consist of all work necessary to construct pipe installation shown on the drawings and not included in the Additive Bid Items. Couplings to existing main and service pipe shall be required at multiple locations. All work shall be in accordance with the drawings and specifications for this project.

"Additive Bid Item 1" will consist of all work necessary to construct pipe installation from station 700+00 to 718+50, 350+00 to 370+93, and 800+00 to 803+44. Couplings to existing main and service pipe shall be required at multiple locations. All work shall be in accordance with the drawings and specifications for this project.

"Additive Bid Item 2" will consist of all work necessary to construct pipe installation beginning at Station 161+85 and ending at Station 220+00. Couplings to existing main and service pipe shall be required at multiple locations. All work shall be in accordance with the drawings and specifications for this project.

"Additive Bid Item 3" will consist of all work necessary to construct pipe installation beginning at Station 599+80 and ending at Station 631+60. Couplings to existing main and service pipe shall be required at multiple locations. All work shall be in accordance with the drawings and specifications for this project.

"Additive Bid Item #4" will consist of all work necessary to construct pipe installation beginning at station E10+65 on Road 5 and ending at station E24+56 on Saturn Drive. Couplings to existing main piping will be required at each end. All work shall be in accordance with drawings and

specifications for this work.

#### 1.2 SUPPLEMENTARY BID REQUIREMENTS

Bidders shall include a detailed pipe installation plan in their response to the bid solicitation for this work. Contract drawings define the installation method for the entire amount of pipe to be installed. Bidder's proposed plan shall identify the specific method of installation for each pipe segment, with starting and ending stations for each segment, and shall include specific measures (such as open excavation shoring / bracing requirements) and resources to be used to protect existing infrastructure, such as existing subsurface utilities crossing or running parallel to the new pipe. Bid evaluation, including consideration of bid responsiveness, shall consider the detail and constructability of the plan as a measure of bidder's ability to meet NASA's expectations performing work for this project. The selected bidder's plan will become part of the awarded contract and a performance requirement.

Bidders shall also provide a description of all techniques proposed for exposing and locating the horizontal location and elevations of all existing obstructions, their experience in executing these techniques, and a list of any sub-contractors proposed for executing and recording the work.

#### 1.3 SUBMITTALS

The following shall be submitted in accordance with Section 01 33 00 SUBMITTAL PROCEDURES in sufficient detail to show full compliance with the specification:

##### SD-01 Preconstruction Submittals

Utility outages and connection requests

Borrow, Excavation, Welding, and Hot Work Permits

(MDEQ) Large Construction Notice of Intent

(SWPPP) Storm Water Pollution Prevention Plan

##### SD-11 Closeout Submittals

Working As-Built Drawings (submit monthly)

Final As-Built Drawings

#### 1.4 CONTRACT DRAWINGS

The following drawings accompany this specification and are a part thereof.

Drawing No. EMI 11B315-01

Sheets G-001 through G-007, C-101, C-201 through C-219, C-401 through C-431, and C-501 through C-518

Dimensions on drawings shall be checked for accuracy by the Contractor. The Contractor shall determine exact dimensions for proper fit. Drawings shall not be construed as being detailed working drawings.

One set of full scale contract drawings, 11 X 17 inches maps, copies of contract drawings, specifications, and a digital copy of each on a CD will

be furnished to the Contractor without charge. Reference publications will not be furnished.

The Contractor shall immediately check furnished drawings and notify the Government of any discrepancies.

#### 1.5 WORK RESTRICTIONS

The area that this project involves is currently being used in support of active test programs and other activities at Stennis Space Center. Periodically, access to the construction area will be restricted in preparation of these activities. The Government will provide 24 hours written notice when access to the construction site will be restricted during normal working hours. Written notice shall be provided by email or fax to the Contractor's primary office or temporary on-site office. The Contractor will not be compensated for equipment, labor and tools standby time during the restricted period. For any restriction to the construction site during normal working hours with less than 24 hours written notice, the Contractor will be compensated for equipment, labor and tools standby time during the restricted period. The Contractor shall secure all tools, tool boxes, equipment, machinery and appliances and protect them from heat, water and/or vibration damage at the end of each day.

#### 1.6 NORMAL DUTY HOURS

Normal duty hours for work shall be from 7:00 a.m. to 3:30 p.m., Monday through Friday. Requests for additional work shall require written approval from the COTR 7 days in advance of the proposed work period.

#### 1.7 OCCUPANCY OF PREMISES

Nearby building(s) and facilities will be occupied during performance of work under this Contract. Occupancy notifications will be posted in a prominent location in the work area.

#### 1.8 STORM WATER POLLUTION PREVENTION

Contractor shall submit a Mississippi Department of Environmental Quality (MDEQ) Large Construction Notice of Intent and a (SWPPP) Storm Water Pollution Prevention Plan (SWPPP) to the Mississippi Department of Environmental Quality. Perform work in accordance with the MDEQ general permit and MDEQ approved SWPPP.

#### 1.9 PROJECT ENVIRONMENTAL GOALS

Contractor shall distribute copies of the Environmental Goals to each subcontractor in accordance with Section 01 33 00 SUBMITTAL PROCEDURES. The overall goal for construction and operation is to produce a project that meets the functional program needs and incorporates the principles of sustainability. Specifically:

- a. Preserve and restore the site ecosystem and biodiversity; avoid site degradation and erosion. Minimize offsite environmental impact.
- b. Use the minimum amount of energy, water, and materials practical to meet the design intent. Select energy and water efficient equipment and strategies.

- c. Use environmentally preferable products and decrease toxicity levels of materials used.
- d. Use renewable energy and material resources when practical.
- e. Optimize operational performance (through commissioning efforts) in order to ensure energy efficient equipment operates as intended.
- f. Manage construction site and storage of materials to ensure no negative impact on the environment.
- g. Reduce construction waste through reuse, recycling, and supplier take-back.

#### 1.10 UTILITY LOCATION VERIFICATION AND RESPONSIBILITY

Contractor shall be responsible for field verifying the location of all utilities prior to starting work. At a minimum, the following requirements must be met when working in and around all utilities (Government-owned or publicly / commercially-owned):

- a. Dimensions and locations provided on the drawings are approximate. Contractor is responsible for field verifying all locations and dimensions. Contractor shall notify the COTR or designated representative of any discrepancies in writing upon discovery.
- b. Acquire a Stennis Space Center (SSC) Dig Permit prior to initiating excavation activities. Contractor shall submit in writing a request for an Excavation Permit to the COTR seven (7) working days prior to the start of excavation activities. Refer to Appendix I.
- c. Contractor shall contact the Mississippi One Call System (811 or 800-227-6477) to locate publicly / commercially-owned utilities on the Stennis Space Center Facility within the relevant work area.
- d. Contractor shall use hand-digging methods to determine depth of subsurface utilities as required by the SSC Dig Permit and/or Mississippi One Call System response. Contractor may request use of methods alternate to hand-digging by submittal of a written Request for Information to the Contracting Officer. No other method is permitted without written approval provided by the Contracting Officer.
- e. Contractor is responsible for all costs associated with utilities / assets damaged by Contractor's activities not conforming to SSC Dig Permit and Mississippi One Call requirements. Costs include timely repair/replacement and full restoration of any financial loss (direct and/or indirect) due to utility interruption / asset damage.
- f. Contractor shall conduct a subsurface utility and destruction investigation in advance of pipe construction; refer to Section 31 23 00.00 20 EXCAVATION AND FILL.

#### 1.11 MAINTANANCE OF TRAFFIC

Contractor shall conduct the work, including delivery of materials and



removal of debris to disposal areas, in a manner that will ensure minimum interference with the streets, walks, passageways, and other facilities occupied and used by the Government.

Contractor shall maintain traffic in accordance with the Sequence of Construction provided in the drawings. If Contractor desires to change the Sequence of Construction, Contractor must submit an alternate plan to the COTR. An alternate plan must be approved by the COTR prior to implementation. All traffic handling for the project must be in accordance with the Manual of Uniform Traffic Control Devices (MUTCD), most recent version.

## PART 2 PRODUCTS

Not used.

## PART 3 EXECUTION

### 3.1 OCCUPANCY OF PREMISES

Before work is started, the Contractor shall arrange with the COTR a sequence of procedure, means of access, space for storage of materials and equipment, and use of approaches, corridors, and stairways.

### 3.2 TEMPORARY STRUCTURES

Contractor-owned trailers or storage structures shall be prohibited on Government property without prior approval from the COTR. The COTR shall approve the location, type, and quantity of Contractor-owned trailers or storage structures. Upon receipt of COTR approval in writing, Contractor shall be responsible for planning and constructing Contractor-owned or leased trailers and storage structures required for the project and obtaining permits and clearances required for the installation of such facilities. Contractor will be responsible for the costs of providing and using approved temporary signing, roadways, electric, water, sewer, and communication lines to the facilities as needed. Trailers and storage structures shall be adequate for the required usage, shall not create unsafe conditions, and shall not violate applicable codes and standards. A 24-inch by 24-inch sign must be affixed to each trailer or storage structure containing the following information:

- Company Name
- Mailing Address
- Company Phone Number
- Emergency Contact Phone Number

NASA, at their discretion, shall inspect these Contractor-owned trailers or storage structures for compliance with OSHA, NEC, DOT, Life Safety Code and Uniform building Codes.

### 3.3 MATERIAL AND EQUIPMENT STORAGE

Contractors will be provided designated on-site locations, in reasonable proximity of the construction site, for which they will be allowed reasonable space for storage of equipment and materials. The Contractor shall supply trailers, canisters, tarps, barricades, and/or other temporary structures necessary to protect and secure stored materials. Proper storage, shelter and protection of equipment and material shall be the responsibility of the Contractor. Storage in open yard or lawn areas shall be barricaded to prevent unauthorized or inadvertent entry, and shall have

clearly designated signage.

Storage area signage, whether inside or outside of Government buildings, shall clearly identify access restrictions, required PPE and other site specific hazards. The Contractor's signage and barricades shall be sufficient to prevent inadvertent entry of personnel into the restricted areas, but shall allow safe and unobstructed entry of site Operations personnel to perform operations and maintenance activities. Contractor shall be responsible for good housekeeping practices, and shall ensure that all operational doorways, electrical panels, control panels, etc. are unobstructed by stored or staged materials and equipment. The Contractor shall immediately report any instances of unauthorized personnel entering such areas, or any instances of improper PPE use within the areas.

The Contractor shall be responsible for the handling, protection, and storage of all material and equipment. NASA, at their discretion, shall inspect each construction site for compliance with OSHA, NEC, and the Life Safety Code. Any identified discrepancies shall be immediately corrected by the Contractor.

3.4 ON-SITE PERMITS

3.4.1 Utility Outages and Connection Requests

Work shall be scheduled to hold outages to a minimum, 24 hours or less, and schedule for weekends.

Utility outages and connections required during the prosecution of work that affect existing systems shall be arranged for at the convenience of the Government.

The COTR shall permit utility outages at his discretion.

The Contractor shall not be entitled to additional payment for utility outages and connections required to be performed outside the regular work hours.

Requests for utility outages and connections shall be made in writing to the COTR at least 30 working days in advance of the time required. Each request shall state the system involved, area involved, approximate duration of outage, and the nature of work involved.

3.4.2 Borrow, Excavation, Welding, and Hot Work Permits

<u>ACTIVITY</u>	<u>SUBMISSION DATE</u>	<u>SUBMISSION FORM</u>
Excavation	7 days prior to work	Request by letter
Welding and Hot Work	7 days prior to work	Request by letter

Permits shall be posted at a conspicuous location in the construction area.

Permits are the property of the Government and shall be returned to the COTR upon completion of permitted work.

Burning of trash or rubbish is not permitted at Stennis Space Center.

3.5 SALVAGE MATERIAL AND EQUIPMENT

Items of material designated by the COTR to be salvage shall remain the

property of the Government.

It shall be segregated, itemized, delivered, and off-loaded at the Government designated storage area located within 5 miles of the construction site.

The Contractor shall maintain property control records for material or equipment designated as salvage. The Contractor's system of property control may be used if approved in accordance with Section 01 33 00 SUBMITTAL PROCEDURES. The Contractor shall be responsible for storage and protection of salvaged materials and equipment until disposition by the COTR. All salvaged material and equipment turned over to the Government shall have Form SSC 55 request for turn in.

### 3.6 PRESERVATION OF HISTORICAL AND ARCHAEOLOGICAL RESOURCES

If known historical, archaeological and cultural resources exist within the Contractor's work area, they have been designated on the contract drawings. The Contractor shall install protection for these resources as shown on the drawings and shall be responsible for their preservation during the contract.

If, during construction activities, the Contractor observes items that might have historical or archaeological value, such observations shall be reported immediately to the COTR so that the appropriate authorities may be notified and a determination can be made as to their significance and what, if any, special disposition of the finds shall be made. The Contractor shall cease all activities that may result in the destruction of these resources and shall prevent his/her employees from trespassing on, removing, or otherwise damaging such resources.

### 3.7 RECORD DRAWINGS

Record drawings (working and final) show final as-built conditions of the project. This paragraph covers record drawings complete, as a requirement of the contract.

1. Submit two red-line prints of contract drawings as working record drawings each month while activities are performed on SSC.
2. Submit two red-line as-built prints of contract drawings as final record drawings. Complete submission within 15 days of COTR acceptance of the work. This includes all FCRs, RFIs, and any other red-lines.
3. Submitted drawings become the property of the Government.
4. Failure to submit final record drawings, as required herein, will be cause for withholding any payment due the Contractor under this contract.
5. Approval and acceptance of final record drawings must be accomplished before final payment is made to the Contractor.

The terms "drawings," "contract drawings," "drawing files," "working record drawings" and "final record drawings" refer to contract drawings which are revised to be used for final record drawings showing as-built conditions.

-- End of Section --



## SECTION 01 33 00

## SUBMITTAL PROCEDURES

## PART 1 GENERAL

## 1.1 SUMMARY

Requirements of this Section apply to, and are a component part of, each section of the specifications.

## 1.2 SUBMITTALS

A standard transmittal form provided by the Government, SSC Form 581, shall be used to transmit each submittal. Six (6) black line prints and one electronic copy created in PDF format will be submitted with SSC Form 581.

Submittal Description (SD): Drawings, diagrams, layouts, schematics, descriptive literature, illustrations, schedules, performance and test data, and similar materials to be furnished by the Contractor explaining in detail specific portions of the work required by the contract.

The following items, SD-01 through SD-11, are descriptions of data to be submitted for the project. The requirements to actually furnish the applicable items will be called out in each specification.

## SD-01 Preconstruction Submittals

Submittals which are required prior to a notice to proceed on a new contract.

Submittals required prior to the start construction. Schedules or tabular list of data or tabular list including location, features, or other pertinent information regarding products, materials, equipment, or components to be used in the work.

## SD-02 Shop Drawings

Submittals which graphically show relationship of various components of the work, schematic diagrams of systems, detail of fabrications, layout of particular elements, connections, and other relational aspects of the work.

## SD-03 Product Data

Data composed of catalog cuts, brochures, circulars, specifications and product data, and printed information in sufficient detail and scope to verify compliance with requirements of the contract documents.

## SD-06 Test Reports

Written reports of a manufacturer's findings of his product during field inspections, attesting that the products are installed in accordance with the manufacturer's installation instructions, shop drawings, or other manufacturer's requirements. Written reports by a general contractor or his subcontractors including daily logs reporting on the progress of daily activities or attesting that the work has been

installed in accordance with the contract plans and specifications.

#### SD-07 Certificates

A document, required of the Contractor, or through the Contractor by way of a supplier, installer, manufacturer, or other Lower Tier Contractor, the purpose of which is to further the quality or orderly progression of a portion of the work by documenting procedures, acceptability of methods or personnel, qualifications, or other verification of quality.

Statements signed by responsible officials of a manufacturer of a product, system, or material attesting that the product, system or material meet specified requirements. Statements must be dated after the award of this contract, name the project, and list the specific requirements which it is intended to address.

#### SD-08 Manufacturer's Instructions

Preprinted material describing installation of a product, system, or material, including special notices and material safety data sheets, if any concerning impedances, hazards, and safety precautions.

#### SD-11 Closeout Submittals

Special requirements necessary to properly close out a construction contract. For example, as-built drawings, manufacturer's help and product lines necessary to maintain and install equipment. Also, submittal requirements necessary to properly close out a major phase of construction on a multi-phase contract.

### 1.3 PREPARATION

#### 1.3.1 Marking

Permanent marking shall be provided on each submittal to identify it by contract number; transmittal date; Contractor's, Subcontractor's, and supplier's name, address(es) and telephone number(s); submittal name; specification or drawing reference; and similar information to distinguish it from other submittals. Submittal identification shall include space to receive the review action by the Contracting Officer.

#### 1.3.2 Drawing Format

Drawing submittals shall be prepared on bond (20 lb. bond minimum) paper, not less than 8-1/2 by 11 inches nor larger than 30 by 42 inches in size, except for full size patterns or templates. Drawings shall be prepared to accurate size, with scale indicated, unless other form is required. Drawing reproduces shall be suitable for microfilming and reproduction and shall be of a quality to produce clear, distinct lines and letters. Drawings shall have dark lines on a white background.

Copies of each drawing shall have the following information clearly marked thereon:

- a. Job name, which shall be the general title of the contract drawings.
- b. Date of the drawings and revisions.

- c. Name of Contractor.
- d. Name of Subcontractor.
- e. Name of the item, material, or equipment detailed thereon.
- f. Number of the submittal (e.g., first submittal, etc.) in a uniform location adjacent to the title block.
- g. Government contract number shall appear in the margin, immediately below the title block.

Drawings shall be numbered in logical sequence. Contractor may use his own number system. Each drawing shall bear the number of the submittal in a uniform location adjacent to the title block. Government contract number shall appear in the margin, immediately below the title block, for each drawing.

A blank space, no smaller than 4 by 4 inches shall be reserved on the right hand side of each sheet for the Government disposition stamp.

#### 1.3.3 Data Format

Required data submittals for each specific material, product, unit of work, or system shall be collected into a single submittal and marked for choices, options, and portions applicable to the submittal. Marking of each copy of product data submitted shall be identical. Partial submittals will not be accepted for expedition of construction effort.

#### 1.3.4 Samples

Samples shall be physically identical with the proposed material or product to be incorporated in the work, fully fabricated and finished in the specified manner, and full scale. Where variations in color, finish, pattern, or texture are inherent in the material or product represented by the sample, multiple units of the sample, showing the near-limits of the variations and the "average" of the whole range (not less than 3 units), shall be submitted. Each unit shall be marked to describe its relation to the range of the variation. Where samples are specified for selection of color, finish, pattern, or texture, the full set of available choices shall be submitted for the material or product specified. Sizes and quantities of samples shall represent their respective standard unit.

### 1.4 SUBMISSION REQUIREMENTS

#### 1.4.1 Schedules

Within 21 days of notice to proceed, the Contractor shall provide, for approval, the following schedule of submittals:

- a. A schedule of shop drawings and technical submittals required by the specifications and drawings. Schedule shall indicate the specification or drawing reference requiring the submittal; the material, item, or process for which the submittal is required; the "SD" number and identifying title of the submittal; the Contractor's anticipated submission date and the approval need date.

- b. A separate schedule of other submittals required under the contract but not listed in the specifications or drawings. Schedule will indicate the contract requirement reference; the type or title of the submittal; the Contractor's anticipated submission date and the approved need date (if approval is required).
- c. Submittals called for by the contract documents will be listed on one of the above schedules. If a submittal is called for but does not pertain to the contract work, the Contractor shall include it in the applicable schedule and annotate it "N/A" with a brief explanation. Approval of the schedules does not relieve the Contractor of supplying submittals required by the contract documents but which have been omitted from the schedules or marked "N/A".
- d. Copies of both schedules shall be re-submitted monthly annotated by the Contractor with actual submission and approval dates. When all items on a schedule have been fully approved, no further re-submittal of the schedule is required.

#### 1.4.2 Drawings Submittals

Blackline prints of each drawing shall be submitted. One print, marked with review notations, will be returned to the Contractor.

#### 1.4.3 Data Submittals

Indexed and bound product data shall be submitted. One set, marked with review notations, will be returned to the Contractor.

#### 1.4.4 Samples

Two sets of identified samples shall be submitted. A copy of the transmittal form, marked with review notations including selections, will be returned to the Contractor.

Samples that are intended or permitted to be returned and actually incorporated in the work are so indicated in the individual technical sections. These samples will be returned to the Contractor, at his expense, to be clearly labeled, with installation location recorded. Samples shall be in undamaged condition at the time of installation.

Where mockups and similar large samples are required by individual technical sections, it is recognized that these are a special type of sample which cannot be readily "transmitted" as specified for submittal of samples. Otherwise, and except as indicated in the individual technical sections, the requirements for samples shall be complied with and a transmittal form shall be processed for each mockup, to provide a record of the activity.

### 1.5 GOVERNMENT'S REVIEW

#### 1.5.1 Review Notations

Contracting Officer will review submittals will be reviewed and pertinent notation will be provided within 14 calendar days after date of submission. Submittals will be returned to the Contractor with the following notations:



- a. Submittals marked "Approved as Submitted." authorize the Contractor to proceed with the work covered.
- b. Submittals marked "Approved, Except as Noted, Resubmission Not Required." authorize the Contractor to proceed with the work covered provided he takes no exception to the corrections. Notes shall be incorporated prior to submission of the final submittal.
- c. Submittals marked "Approved, Except as Noted, Resubmission Required." require the Contractor to make the necessary corrections and revisions and to re-submit them for approval in the same routine as before, prior to proceeding with any of the work depicted by the submittal.
- d. Submittals marked "Will Be Returned By Separate Correspondence" require the Contractor to follow the instructions given in the separate correspondence. If re-submission is required, the Contractor shall re-submit them for approval in the same routine as before prior to proceeding with any of the work depicted by the submittal.
- e. Submittals marked "Disapproved" indicate noncompliance with the contract requirements and shall be re-submitted with appropriate changes. No item of work requiring a submittal shall be accomplished until the submittals are approved or approved as noted.
- f. Submittals marked "Receipt Acknowledged" confirm receipt only.
- g. Submittals marked "Other (Specify)" require the Contractor to follow the instructions given in the separate correspondence. If re-submission is required, the Contractor shall re-submit them for approval in the same routine as before, prior to proceeding with any of the work depicted by the submittal.

Contractor shall make corrections required and submit per this Section 01 33 00, Part 1.2 SUBMITTALS. Approval of the submittals shall not be construed as a complete check, but will indicate only that the general method of construction and detailing is satisfactory. Contractor shall be responsible for the dimensions and design of connection details and construction of work. Failure to point out deviations may result in the Government requiring rejection and removal of such work at the Contractor's expense.

#### 1.5.2 Sample Approval

Contractor shall furnish, for the approval, samples required by the specifications or by the Contracting Officer. Shipping charges shall be paid by the Contractor. Materials or equipment requiring sample approval shall not be delivered to the site or used in the work until approved.

Each sample shall have a label indicating:

- a. Name of project
- b. Name of Contractor
- c. Material or equipment

- d. Place of origin
- e. Name of producer and brand
- f. Specification section to which samples applies
- g. Samples of furnished material shall have additional markings that will identify them under the finished schedules.

Contractor shall submit two samples of materials where samples are requested. Contractor shall transmit with each sample a letter, original and two copies, containing the above information.

Approval of a sample shall be only for the characteristics or use named in such approval and shall not be construed to change or modify any contract requirements. Before submitting samples, the Contractor shall assure that the materials or equipment will be available in quantities required in the project. No change or substitution will be permitted after a sample has been approved.

Materials and equipment incorporated in the work shall match the approved samples. If requested, approved samples, including those which may be damaged in testing, will be returned to the Contractor, at his expense, upon completion of the contract. Samples not approved will also be returned to the Contractor at his expense, if so requested.

Failure of any materials to pass the specified tests will be sufficient cause for refusal to consider, under this contract, any further samples of the same brand or make of that material. Government reserves the right to disapprove any material or equipment which previously has proved unsatisfactory in service.

Variations from contract requirements shall be specifically pointed out in transmittal letters. Failure to point out deviations may result in the Government requiring rejection and removal of such work at no additional cost to the Government.

Samples of various materials or equipment delivered on the site or in place may be taken by the Contracting Officer for testing. Samples failing to meet contract requirements will automatically void previous approvals. Contractor shall replace such materials or equipment to meet contract requirements.

Approval of the Contractor's samples shall not relieve the Contractor of his responsibilities under the contract.

## 1.6 PROGRESS SCHEDULE

### 1.6.1 Bar Chart

Contractor shall:

- a. Submit the progress chart, for approval, within 21 days of Notice to Proceed and 4 copies.
- b. Prepare the progress chart in the form of a bar chart utilizing form "Construction Progress Chart" or comparable format acceptable.

- c. Include no less than the following information on the progress chart:
  - (1) Break out by major headings for primary work activity.
  - (2) A line item break out under each major heading sufficient to track the progress of the work.
  - (3) A line item showing contract finalization task which includes punch list, clean-up and demolition, and final construction drawings.
  - (4) A materials bar and a separate labor bar for each line item. Both bars will show the scheduled percentage complete for any given date within the contract performance period. Labor bar will also show the number of men (man-load) expected to be working on any given date within the contract performance period.
  - (5) The estimated cost and percentage weight of total contract cost for each materials and labor bar on the chart.
  - (6) Separate line items for mobilization and drawing submittal and approval. (These items are to show no associated costs.)
- d. Update the progress schedule with 4 copies every 30 days throughout the contract performance period.

#### 1.7 STATUS REPORT ON MATERIALS ORDERS

Within 21 days after notice to proceed, the Contractor shall submit, for approval, an initial status report on materials orders. This report will be updated and re-submitted every 28 days as the status on material orders changes.

Report shall list, in chronological order by need date, materials orders necessary for completion of the contract. The following information will be required for each material order listed:

- a. Material name, supplier, and invoice number.
- b. Bar chart line item or CPM activity number affected by the order.
- c. Delivery date needed to allow directly and indirectly related work to be completed within the contract performance period.
- d. Current delivery date agreed on by supplier.
- e. When item d exceeds item c, the effect that delayed delivery date will have on contract completion date.
- f. When item d exceeds item c, a summary of efforts made by the Contractor to expedite the delayed delivery date to bring it in line with the needed delivery date, including efforts made to place the order (or subcontract) with other suppliers.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION (Not Applicable)

-- End of Section --



40 CFR 122	The National Pollutant Discharge Elimination System (NPDES)
40 CFR 257	Criteria for Classification of Solid Waste Disposal Facilities and Practices
40 CFR 258	Criteria for Municipal Solid Waste Landfills
40 CFR 261	Identification and Listing of Hazardous Waste
40 CFR 273	Standards for Universal Waste Management
40 CFR 761	Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce and Use Prohibitions
40 CFR 763	Asbestos
40 CFR 82	Protection of Stratospheric Ozone
43 CFR 7	Protection of Archaeological Resources
49 CFR	Transportation

### 1.3 SUBMITTALS

The following shall be submitted in accordance with Section 01 33 00 SUBMITTAL PROCEDURES in sufficient detail to show full compliance with the specification:

#### SD-01 Preconstruction Submittals

Pre-Award Submittals - These submittals will be provided as part of the bid package:

- EMR documentation from insurance carrier
- OSHA logs (last 3 years)
- OSHA/NASA violation summaries (last 3 years)
- Written Safety and Health Manual with applicable procedures specific to working at Stennis Space Center, including but not limited to:
  - Accident/Incident Investigation Procedure
  - Unsafe Condition Reporting Procedure
  - Safety and Health Orientation Outline
  - Safety and Health Training Plans for Project
  - Applicable training records as requested
  - Activity Hazard Analysis Procedure and Form
  - Job site Safety and Health Inspection Procedure and forms used
  - Safety and Health evaluations for subcontractors
  - Safety and Health Incentive Program, and Examples
- Resume(s) of qualified Safety and Health Professional(s) and names of competent persons per area of competency
- Safety and Health awards/recognition
- Contractor Personnel Contact Information
- Pre-Use Planning for Hazardous Operations
- Permit Applications
- Storm Water Pollution Prevention Plan(if applicable)

Post-Award Submittals - These submittals will be required of the bid winner:

Safety and Health Plan re-submittal to reflect any changes specific to the job  
Construction Project Hazard Analysis (CPHA) form SSC-853 or equivalent.

SD-03 Product Data

Material Safety Data Sheets  
List of all Hazardous Material  
Monthly usage report, detailing type and amount of hazardous materials used (due by 10th working day of month for previous month's usage)

SD-06 Test Reports

Exposure Monitoring

SD-07 Certificates

Hazardous Waste Documentation  
Mishap Exposure Report

SD-11 Closeout Submittals

Abrasive Blasting Report  
Affirmative Procurement Materials List Report  
Report detailing the type(s) and amount(s) of Paint used  
SSC-883, Sustainable Acquisitions Report

1.3.1 Required References

E.O. 13423  
NASA NPG 8621.1  
NPR 8715.3  
SPR 8715.1  
SSP-8715-0001  
SCWI-8500-0004-ENV  
SCWI-8500-0017  
SCWI-8500-0020-ENV  
SCWI-8715-0008  
10 CFR Part 20  
29 CFR 1910  
29 CFR 1926  
40 CFR 112  
40 CFR 122  
40 CFR 257  
40 CFR 258  
40 CFR 261  
40 CFR 273  
40 CFR 761  
40 CFR 763  
40 CFR 82  
43 CFR 7  
49 CFR

### 1.3.2 Required Submittals

EMR documentation from insurance carrier  
OSHA logs (last 3 years)  
OSHA/NASA violation summaries (last 3 years)  
Written Safety and Health Manual with applicable procedures  
Accident/Incident Investigation Procedure  
Unsafe Condition Reporting Procedure  
Safety and Health Orientation Outline  
Safety and Health Training Plans for project  
Applicable training records as requested  
Activity Hazard Analysis Procedure and form  
Job site Safety and Health Inspection Procedure and forms used  
Safety and Health evaluations for subcontractors  
Safety and Health Incentive Program, and Examples  
Resume(s) of qualified Safety and Health Professional(s) and names  
of competent persons per area of competency  
Safety and Health awards/recognition  
Contractor Personnel Contact Information  
Safety and Health Plan re-submittal  
Pre-Use Planning for Hazardous Operations  
Permit Applications  
Storm Water Pollution Prevention Plan  
Construction Project Hazard Analysis (CPHA) form SSC-853  
Material Safety Data Sheets  
List of all Hazardous Material  
Monthly usage report  
Exposure Monitoring  
Hazardous Waste Documentation  
Mishap Exposure Report  
Abrasive Blasting Report  
Affirmative Procurement Materials List Report  
Report detailing the type(s) and amount(s) of Paint used  
SSC-883, Sustainable Acquisitions Report

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

#### 3.1 GENERAL SAFETY PROVISIONS

The contractor shall read and understand all the Safety and Health policies and procedures provided, and fully understand and comply with applicable Governmental regulations related to their business and the project. This information is available for download from <http://constructionsafety.ssc.nasa.gov>. NASA will not be liable to reimburse or increase funding to cover expenses incurred by discoveries of non-compliance or unforeseen and/or misunderstood compliance responsibilities of the contractor.

The Contractor shall take all reasonable safety and health measures in performing work under this Contract. 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) compliance with safety and health standards, specifications, issuances, reporting requirements, and provisions in the current Stennis Space Center SPR 8715.1, Safety and Health Program Requirements, and SCWI-8715-0008, John C. Stennis Space Center Construction Safety and Health Program.



The Contractor shall provide an up-to-date and well-written safety and health program designed to address the hazards/risks of the work performed and applicable governmental regulations. This shall be demonstrated by providing a copy of the safety plan, procedures and associated forms that are tailored to fit the work at NASA SSC. This Plan shall be approved by the Contracting Officer (CO) prior to commencement of work.

After acceptance of the Safety and Health Plans, the contractor shall notify the CO in writing a minimum of fourteen (14) calendar days prior to any proposed change. Proposed changes must be submitted to the Office of SMA for approval prior to any work being performed within the scope of the proposed changes.

The Contractor shall proactively manage the project through demonstrated actions of management commitment, employee involvement, worksite analysis, hazard prevention and control, and safety and health training.

The contractor shall manage all related safety and health records so they are available for review and audit by NASA SSC.

### 3.2 TRAINING AND ORIENTATION

Prior to starting work at SSC, all Construction project managers, superintendants, supervisors (i.e., foremen, crew chiefs) and each construction employee shall complete the Basic Orientation Plus program (Code 08BG) and the NASA SSC Safety and Health Orientation (Code 08SSC) presented by the Gulf Coast Safety Council (GCSC). This program can be attended at any of the 26 reciprocal Safety Councils throughout the United States that are associated with the GCSC. This training will be current within onetwo years. (Contact can be made at <http://www.gulfcoastsafetycouncil.com> to locate the nearest council.) All arrangements and payments shall be the responsibility of the contractor.

If it is not possible to attend the GCSC Basic Orientation program, then OSHA 10-hour (Construction Industry) training for contractor employees and 30-hour (Construction Industry) training for Managers, Supervision and Safety and Health professionals will be required. This training will also be current within two years and is also available through the GCSC. Note: All contractor employees regardless of position are still required to participate in the NASA SSC Safety and Health Orientation and provide a credential within onetwo years of attendance.

OSHA 30-hour, 10-hour, and Orientation plus training shall not take the place of topic-specific training required under OSHA regulations, such as Confined Space Entry, Lockout, Fall Protection, and Respiratory Protection, etc.

Documentation of training and orientation must be available at the jobsite for auditing purposes. Contractor employees shall show proof of Training and Orientation to the government or their representative(s) when challenged to do so. Failure to provide a current credential will result in temporary loss of job site access until one has been obtained.

### 3.3 LANDSCAPING USING NATIVE PLANT SPECIES

E.O. 13423 requires that when landscaping on SSC property, the Contractor shall use regionally native plants and minimize adverse effects on natural

habitats encountered during the project. When applicable, additional information will be provided.

-- End of Section --

## SECTION 01 42 00

## SOURCES FOR REFERENCE PUBLICATIONS

## PART 1 GENERAL

## 1.1 REFERENCES

Reference publications are cited in other sections of the specifications along with identification of their sponsoring organizations. The addresses of the sponsoring organizations are listed below, and if the source of the publications is different from the address of the sponsoring organization, that information is also provided.

AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE)  
1801 Alexander Bell Drive  
Reston, VA 20190-4400  
Ph: 703-295-6300  
Fax: 703-295-6222  
Internet: [www.pubs.asce.org](http://www.pubs.asce.org)  
e-mail: [marketing@asce.org](mailto:marketing@asce.org)

AMERICAN WATER WORKS ASSOCIATION (AWWA)  
6666 West Quincy  
Denver, CO 80235  
Ph: 800-926-7337  
Fax: 303-795-2114  
Internet: [www.awwa.org](http://www.awwa.org)

AMERICAN WELDING SOCIETY (AWS)  
550 N.W. LeJeune Road  
Miami, FL 33126  
Ph: 800-443-9353  
Fax: 305-443-7559  
Internet: [www.amweld.org](http://www.amweld.org)

ASTM INTERNATIONAL (ASTM)  
100 Barr Harbor Drive  
West Conshohocken, PA 19428-2959  
Ph: 610-832-9500  
Fax: 610-832-9555  
Internet: <http://www.astm.org>

EXECUTIVE ORDERS  
Contact:  
Marcia Stewart  
Environmental Services  
B-1100  
Stennis Space Center, MS 39529  
Ph: 228-688-1302

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION (NASA)  
Publication(s) Available From  
Superintendent of Documents  
U.S. Government Printing Office  
Washington, DC 20402  
Ph: 202-783-3238

STENNIS PROCEDURAL REQUIREMENTS (SPR)  
Central Engineering Files  
Building 8000  
Stennis Space Center, MS 39529  
Ph: 228-688-3043  
Fax: 228-688-3083

STENNIS SPACE CENTER STANDARDS (SSC)  
Central Engineering Files  
Building 8000  
Stennis Space Center, MS 39529  
Ph: 228-688-3043  
Fax: 228-688-3083

STENNIS COMMON WORK INSTRUCTION (SCWI)  
Contact:  
Marcia Stewart  
Environmental Services  
B-1100  
Stennis Space Center, MS 39529  
Ph: 228-688-1302

UNDERWRITERS LABORATORIES (UL)  
333 Pfingsten Rd.  
Northbrook, IL 60062-2096  
Ph: 847-272-8800  
Fax: 847-272-8129  
Internet: <http://www.ul.com/>  
Order from:  
Global Engineering Documents  
15 Inverness Way East  
Englewood, CO 80112-5776  
Ph: 800-569-7128  
Fax: 303-397-7945  
Internet: <http://global.ihs.com>  
E-mail: [global@ihs.com](mailto:global@ihs.com)

U.S. ARMY CORPS OF ENGINEERS (USACE)  
Order from:  
U.S. Army Engineer Waterways Experiment Station  
ATTN: Technical Report Distribution Section  
Services Branch, TIC  
3909 Halls Ferry Rd.  
Vicksburg, MS 39180-6199  
Ph: 601-634-2571  
Fax: 601-634-2506

U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)  
Public Information Center  
401 M St., SW  
Washington, DC 20460  
Ph: 800-490-9198  
FAX: 202-260-6257  
Internet: <http://www.epa.gov>  
NOTE: Some documents are available only from:  
National Technical Information Services (NTIS)  
5285 Port Royal Rd.  
Springfield, VA 22161

Ph: 800-553-6847  
Fax: 703-321-8547  
Internet: <http://www.fedworld.gov/ntis/ntishome.html>

U.S. GENERAL SERVICES ADMINISTRATION (GSA)  
General Services Administration  
1800 F Street, NW  
Washington, DC 20405  
PH: 202-501-0705  
Order from:  
General Services Administration  
Federal Supply Service Bureau  
1941 Jefferson Davis Highway  
Arlington, VA 22202  
PH: 703-605-5400  
Internet: <http://www.fss.gsa.gov>

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)  
700 Pennsylvania Avenue, N.W.  
Washington, D.C. 20408  
Phone: 866-325-7208  
Internet: <http://www.archives.gov>  
Order documents from:  
Superintendent of Documents  
U.S. Government Printing Office  
732 North Capitol Street, NW  
Washington, DC 20401  
Mailstop: SDE  
Ph: 866-512-1800 or 202-512-1800  
Fax: 202-512-2250  
Internet: <http://www.gpo.gov>  
E-mail: [gpoaccess@gpo.gov](mailto:gpoaccess@gpo.gov)

-- End of Section --

## SECTION 31 23 00.00 20

## EXCAVATION AND FILL

## PART 1 GENERAL

Contractor shall perform all excavations, pipeline casing, and related work complete in accordance with the John C. Stennis Space Center Dig Permit Standard (Form SSC-618), SSTD-8070-0119-MISC Rev. A, included as attachment to, and part of, this specification.

## 1.1 REFERENCES

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

## AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE)

ASCE 38-02 Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data

## AMERICAN WATER WORKS ASSOCIATION (AWWA)

AWWA C111 (2007) Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings  
AWWA C206 (2011) Field Welding of Steel Water Pipe  
AWWA M55 (2006) PE Pipe - Design and Installation

## AMERICAN WELDING SOCIETY (AWS)

AWS D1.1/D1.1M (2010) Structural Welding Code - Steel

## ASTM INTERNATIONAL (ASTM)

ASTM C 136 (2006) Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates  
ASTM D 1140 (2000; R 2006) Amount of Material in Soils Finer than the No. 200 (75-micrometer) Sieve  
ASTM D 1557 (2009) Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft<sup>3</sup>) (2700 kN-m/m<sup>3</sup>)  
ASTM D 2487 (2006e1) Soils for Engineering Purposes (Unified Soil Classification System)  
ASTM D 4318 (2005) Liquid Limit, Plastic Limit, and Plasticity Index of Soils  
ASTM D 6938 (2008a) Standard Test Method for In-Place

Density and Water Content of Soil and  
Soil-Aggregate by Nuclear Methods (Shallow  
Depth)

ASTM D 698 (2007e1) Laboratory Compaction  
Characteristics of Soil Using Standard  
Effort (12,400 ft-lbf/cu. ft. (600  
kN-m/cu. m.))

STENNIS SPACE CENTER STANDARDS (SSC)

SSTD-8070-0119-MISC (Dec. 2009) Rev. A, John C. Stennis Space  
Center Dig Permit Standard (Form SSC-618)

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1 (2008) Safety and Health Requirements  
Manual

U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)

EPA 530/F-93/004 (1993; Rev O; Updates I, II, IIA, IIB, and  
III) Test Methods for Evaluating Solid  
Waste (Vol IA, IB, IC, and II) (SW-846)

EPA 600/4-79/020 (1983) Methods for Chemical Analysis of  
Water and Wastes

U.S. GENERAL SERVICES ADMINISTRATION (GSA)

CID A-A-1909 (Basic Notice 1; Canc. Notice 2) Fertilizer

1.2 DEFINITIONS

1.2.1 Degree of Compaction

Degree of compaction is expressed as a percentage of the maximum density obtained by the applicable test procedure presented in either ASTM D 698 or ASTM D 1557, for general soil types, abbreviated as percent laboratory maximum density.

1.3 SUBMITTALS

Government approval is required for all submittals. The following shall be submitted in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Shoring and Sheeting Plan

Dewatering work plan

Subsurface Utility and Obstruction Location Plan

Submit 15 days prior to starting work.

SD-02 Shop Drawings

Jack and Bore Shop Drawings

## Subsurface Utility/Obstructions Location and Depth

Submit 15 days in advance of applicable phase of work.

## SD-06 Test Reports

Fill and backfill test

Select material test

Density tests

Copies of all laboratory and field test reports within 24 hours of the completion of the test.

## SD-07 Certificates

Jack and Bore Contractor

Certification - 5 years experience minimum performing similar work.

## 1.4 DELIVERY, STORAGE, AND HANDLING

Perform in a manner to prevent contamination or segregation of materials.

## 1.5 REQUIREMENTS FOR OFF SITE SOIL

Soils and granular aggregate brought in from offsite for project use shall contain no chemical or radiological contaminant in excess of undisturbed soil background concentrations at the Stennis Space Center, Mississippi.

Soils brought in from off site for project use may, at Government's option and Contractor's own expense, be tested for TPH, BTEX and full TCLP including ignitability, corrosivity and reactivity. At Contracting Officers' Technical Representative (COTR) discretion, TPH concentrations shall be determined by using EPA 600/4-79/020 Method 418.1, BTEX concentrations shall be determined by using EPA 530/F-93/004 Method 5030/8020, and TCLP shall be performed in accordance with EPA 530/F-93/004 Method 1311. Material shall not be brought on site until approved by the COTR.

## 1.6 REQUIREMENTS FOR ENGINEERED CONTROLS

Contractor shall use engineered temporary controls during all trenching and open excavation activities to preserve existing on-grade and buried utility infrastructure while completing installation of new pipe and accoutrements. These controls are in addition to requirements to verify utility locations and depth and in addition to provisions defined by OSHA for Excavation Safety.

## 1.6.1 Pipe Crossing Over

Excavations reducing cover over buried pipe and infrastructure shall use necessary controls required to prevent damage. Use planking, plating, or other measures as needed to distribute construction loads over surround soil and prohibit additional loading on buried items. Provide necessary temporary thrust restraint where needed to replace restraint removed by excavation.



### 1.7 JACK AND BORE CASING INSTALLATION REQUIREMENTS

The installation of a casing pipe by the method of jacking and boring shall be covered by these specifications. The work shall include, but not be limited to, boring and jacking pits, boring and jacking equipment, sheeting and shoring, steel casing pipe, casing spacers, coatings, location signs as required, miscellaneous appurtenances to complete the entire work as shown on the Drawings and site restoration. Boring and jacking operations shall be performed within the rights-of-way and/or easements shown on the Drawings.

Contractor shall submit Jack and Bore Shop Drawings for piping and appurtenances to include, as a minimum, the following:

1. Details of the casing and carrier pipe installation and other appurtenances.
2. Provide detailed drawings of welded joints to be provided.
3. Copy of the manufacturer's quality control check of materials and production. Provide mill test certificates or certified test reports on pipe and fittings.
4. Provide from the manufacturer an affidavit of compliance with AWWA and ASTM standards referenced in the Specifications. Affidavit shall be included with Shop Drawings submittals.
5. List of all materials and equipment to be used by the Contractor for jacking and boring operations for this Project.

Contractor shall provide a tabulated layout schedule and line drawings including:

1. Descriptive plan of casing installation, carrier pipe installation and casing closures.
2. Contractor shall field verify dimensions, elevations, potential alignment obstructions and other construction criteria prior to preparing the descriptive plan, layout schedule and casing and carrier pipe installation drawings.
3. Methods, details, and schedules for connecting to carrier piping.

Contractor shall submit a Jack and Bore Contractor Certification that the jacking and boring contractor (or subcontractor) is licensed to perform the work specified. Certification shall also include information showing that the jacking and boring contractor (or subcontractor) has a minimum of five (5) years experience with similar construction including jacking and boring casing pipe of the same or larger diameter and the same or greater lengths as that of this Project.

### 1.8 QUALITY ASSURANCE

#### 1.8.1 Shoring and Sheeting Plan

Submit drawings and calculations, certified by a registered professional engineer, describing the methods for shoring and sheeting of excavations. Drawings shall include material sizes and types, arrangement of members, and the sequence and method of installation and removal. Calculations shall include data and references used.

The Contractor is required to provide inspection of excavations and soil/groundwater conditions throughout construction by a qualified person. The qualified person shall be responsible for performing pre-construction

and periodic site visits throughout construction to assess site conditions. The Contractor shall update the excavation, sheeting and dewatering plans as construction progresses to reflect changing conditions and shall submit an updated plan if necessary. A written report shall be submitted, at least monthly, informing the Contractor and COTR of the status of the plan and an accounting of the Contractor's adherence to the plan addressing any present or potential problems. The qualified person shall be available to meet with the COTR at any time throughout the contract duration.

#### 1.8.2 Dewatering Work Plan

Submit procedures for accomplishing dewatering work. Contractor is responsible for complying with applicable groundwater withdrawal and protection regulations, acquiring required permits, complying with water discharge regulation, and coordination with the COTR to assure no adverse impact to SSC facility/installation property and operations.

#### 1.8.3 Utilities

Movement of construction machinery and equipment over, near, and in contact with pipes and utilities during construction shall be at the Contractor's risk. Excavation conducted within 6 feet of known utilities shall be hand dug in accordance with the SSC Dig Permit Standard. Support uncovered lines or other existing work affected by the contract excavation until approval for backfill is granted by the COTR. Report damage to utility lines or subsurface construction immediately to the COTR.

#### 1.8.4 Subsurface Utility Location and Excavation

Contractor shall submit a Subsurface Utility and Obstruction Location and Excavation Plan and Subsurface Utility/Obstructions Location and Depth shop drawings. The work shall meet requirements contained in the John C. Stennis Space Center Dig Permit Standard, SSTD-8070-0119-MISC (attached) and shall be in general accordance with the Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data, Standard Guideline ASCE 38-02.

Contractor shall develop specific horizontal and vertical elevation information for all subsurface utilities (existing and abandoned) and obstructions within the construction corridor. This requirement applies to all subsurface utilities and obstructions and is not limited to content shown on project drawings. Location of utilities shown on the drawings are based on best available information obtained from previous drawings and are augmented by various work performed in some locations since original construction. The approximate horizontal locations were obtained by various methods, much of which did not include uncovering the soil above the utility to verify the suspected location. Minimal information regarding the elevation or relation to existing grade of these utilities has been collected since original construction for verification. Vertical location of the utilities shown on the profile drawings is from previous drawings and includes engineer's best judgment based on typical installations of those types of facilities on site. The physical location, size and configuration of the existing utilities adjacent to, underneath, or above the proposed pipeline to be installed will be determined by the Contractor.

Contractor shall locate, horizontally and vertically, all the existing utilities crossing the proposed pipeline route and all those located within 10 feet horizontally as shown on the drawings in accordance with the John

C. Stennis Space Center Dig Permit Standard, SSTD-8070-0119-MISC (attached). This location work will be completed in a phase prior to the beginning of construction on that phase of work. The utility location work will be undertaken using methods identified in the Dig Permit Standard. Contractor may propose alternate subsurface utility location and excavation methods submitted in writing to the Contracting Officer for review and approval in advance of execution. Based on the investigations, the location, dimensions, and elevation of the obstruction will be determined and recorded by the Contractor. Horizontal tolerance shall be plus or minus 0.5 feet; vertical tolerance shall be plus or minus 0.1 feet.

#### 1.8.5 Jack and Bore Quality Control

The Contractor shall verify existing utility locations prior to constructing jacking and receiving pits, and prior to beginning jacking and boring operations. All pipe, fittings and other appurtenances shall conform to the latest AWWA or ASTM standards as applicable.

Jacking and boring contractor (or subcontractor) shall have a minimum of five (5) years experience with similar construction including jacking and boring casing pipes of the same or larger diameter and the same or greater lengths. All pipe and appurtenances of similar type and material shall be furnished by a single manufacturer who is fully experienced, reputable, and qualified in the manufacture of the items to be furnished. The materials shall be designed, constructed, and installed in accordance with the best practices and methods and shall comply with these Specifications.

The Contractor shall obtain from the pipe manufacturer a certificate of inspection to the effect that the casing pipe supplied for this Project has been inspected at the plant and meets the requirements of these Specifications. All materials shall be subjected to visual inspection at time of delivery to the jobsite and just before being lowered into the trench. Materials that do not conform to these Specifications shall be rejected and must be removed immediately from the jobsite by the Contractor. The entire product of any pipe supplier plant may be rejected when, in the opinion of the COTR, the methods of manufacture fail to secure uniform results, or where the materials used are such as to produce inferior pipe.

## PART 2 PRODUCTS

### 2.1 SOIL MATERIALS

#### 2.1.1 Satisfactory Materials

Any materials classified by ASTM D 2487 as GW, GP, GM, GP-GM, GW-GM, GC, GP-GC, GM-GC, SW, SP, SM, SW-SM, and free of debris, roots, wood, scrap material, vegetation, refuse, soft unsound particles, deleterious, and/or objectionable materials. Unless specified otherwise, the maximum particle diameter shall be 1/2 inch.

#### 2.1.2 Unsatisfactory Materials

Materials which do not comply with the requirements for satisfactory materials. Unsatisfactory materials also include man-made fills, trash, refuse, or backfills from previous construction. Unsatisfactory material also includes material classified as satisfactory which contains root and other organic matter, frozen material, and stones larger than 1-1/2 inches. The COTR shall be notified of any contaminated materials.

### 2.1.3 Common Fill

Approved, unclassified soil material with the characteristics required to compact to the soil density specified for the intended location.

### 2.1.4 Backfill and Fill Material

Excavated soil meeting satisfactory materials requirements (2.1.1).

### 2.1.5 Select Material

Provide materials classified as Size No. 610 crushed stone aggregate per Mississippi Standard Specifications for Road and Bridge Construction.

### 2.1.6 Topsoil

Natural, friable soil representative of productive, well-drained soils in the area, free of subsoil, stumps, rocks larger than one inch diameter, brush, weeds, toxic substances, and other material detrimental to plant growth.

## 2.2 PIPE EMBEDMENT MATERIAL

Except as specified otherwise in the individual piping section, provide embedment (bedding, haunching, and initial backfill) for piping installed by open excavation in accordance with AWWA M55, Class I or II, except as specified herein. Backfill to 12 inches over top of pipe shall be compacted to 95 percent of ASTM D 698 maximum density. Plastic piping shall have embedment from 6 inches below bottomed pipe to 12 inches above top of pipe. Provide materials per AWWA M55 as follows:

- a. Class I: Angular, 0.25 to 1 inches, graded stone, including a number of fill materials that have regional significance such as coral, slag, cinders, crushed stone, and crushed shells.
- b. Class II: Coarse sands and gravels with maximum particle size of 1.5 inches, including various graded sands and gravels containing small percentages of fines, generally granular and noncohesive, either wet or dry. Soil Types GW, GP, SW, and SP are included in this class as specified in ASTM D 2487.

## 2.3 BURIED WARNING AND IDENTIFICATION TAPE

Polyethylene plastic and metallic core or metallic-faced, acid- and alkali-resistant, polyethylene plastic warning tape manufactured specifically for warning and identification of buried utility lines. Provide tape on rolls, 3 inch minimum width, color coded as specified below for the intended utility with warning and identification imprinted in bold black letters continuously over the entire tape length. Warning and identification to read, "CAUTION, BURIED (potable water) LINE BELOW" or similar wording. Color and printing shall be permanent, unaffected by moisture or soil.

### Warning Tape Color Codes

Yellow:	Electric
Yellow:	Gas, Oil; Dangerous Materials
Orange:	Telephone and Other

## Warning Tape Color Codes

	Communications
Blue:	Water Systems
Green:	Sewer Systems
White:	Steam Systems
Gray:	Compressed Air

## 2.3.1 Detectable Warning Tape for Non-Metallic Piping

Polyethylene plastic tape conforming to the width, color, and printing requirements specified above. Minimum thickness of the tape shall be 0.004 inch. Tape shall have a minimum strength of 1500 psi lengthwise and 1250 psi crosswise. Tape shall be manufactured with integral wires, foil backing, or other means of enabling detection by a metal detector when tape is buried up to 3 feet deep. Encase metallic element of the tape in a protective jacket or provide with other means of corrosion protection.

## 2.4 DETECTION WIRE FOR NON-METALLIC PIPING

Detection wire shall be insulated single strand, solid copper with a minimum of 12 AWG.

## 2.5 STEEL CASING PIPE

Steel casing pipe shall conform to the requirements of ASTM Designation A139 (straight seam pipe only) Grade "B" with minimum yield strength of 35,000 psi. The casing pipes shall have the minimum nominal diameter and wall thickness as shown in Table 1. Field and shop welds of the casing pipes shall conform to the American Welding Society (AWS) standard AWS D1.1/D1.1M specifications. Field welds shall be complete penetration, single-bevel groove type joints. Welds shall be airtight and continuous over the entire circumference of the casing pipe and shall not increase the outside pipe diameter by more than 3/4-inch.

Table 1 - Casing Pipe Minimal Nominal Diameter and Wall Thickness.

Carrier Pipe Nominal Diameter (inches)	Casing Outside Diameter (inches)	Casing Wall Thickness (inches)
4	16	0.250
6	16	0.250
8	18	0.250
10	20	0.250
12	24	0.250
14	24	0.250
16	30	0.312
18	36	0.375
20	36	0.375
24	42	0.500
30	48	0.500
36	54	0.500
42	60	0.500

## 2.6 CARRIER PIPE SPACERS

Carrier pipes, inside of steel casing pipe, shall be supported by casing spacers at no more than 10 feet between spacers. Each spacer shall be manufactured of minimum 14-gauge Type 304 stainless steel. All nuts and bolts shall be Type 316 stainless steel and compatible with the respective steel band. Each spacer shall have a minimum of four runner supports manufactured of a high molecular weight polymer plastic. The runner supports shall be of adequate height to position the carrier pipe in the center of casing with a minimum top clearance of 1/2-inch. All casing spacers shall be factory designed, taking in consideration the weight of the carrier pipe filled with water. All calculations and drawings shall be submitted to the Engineer for review.

## 2.7 CASING END SEALS

Casing end seals shall be constructed to completely close both annular openings on either end of the casing. The end seals shall be constructed to completely seal the annular space between the carrier pipe and the casing. The casing end seals shall be constructed to be basically water tight to preclude the intrusion of groundwater into the casing.

## PART 3 EXECUTION

## 3.1 PROTECTION

## 3.1.1 Shoring and Sheeting

Provide shoring bracing, cribbing, trench boxes, and for sheeting where indicated. In addition to Section 25 A and B of EM 385-1-1 and other requirements set forth in this contract, include provisions in the shoring and sheeting plan that will accomplish the following:

- a. Prevent undermining of pavements, foundations and slabs.
- b. Prevent slippage or movement in banks or slopes adjacent to the excavation.

## 3.1.2 Drainage and Dewatering

Provide for the collection and disposal of surface and subsurface water encountered during construction.

## 3.1.2.1 Drainage

It is the responsibility of the Contractor to assess the soil and ground water conditions presented by the plans and specifications and to employ necessary measures to permit construction to proceed. Excavated slopes and backfill surfaces shall be protected to prevent erosion and sloughing. Excavation shall be performed so that the site, the area immediately surrounding the site, and the area affecting operations at the site shall be continually and effectively drained.

## 3.1.2.2 Dewatering

Groundwater flowing toward or into excavations shall be controlled to prevent sloughing of excavation slopes and walls, boils, uplift and heave in the excavation and to eliminate interference with orderly progress of construction. French drains, sumps, ditches or trenches will not be permitted within 3 feet of the foundation of any structure, except with specific written approval, and after specific contractual provisions for restoration of the foundation area have been made. No free liquid water is permitted in the excavation during excavation, pipe installation, or back filling operation.

## 3.1.3 Underground Utilities

Location of the existing utilities indicated is approximate. The Contractor shall physically verify the location and elevation of the existing utilities indicated prior to starting construction in accordance with the SSC Dig Permit and the approved subsurface utility and obstruction location plan.

## 3.1.4 Machinery and Equipment

Movement of construction machinery and equipment over, near, and against pipes and other infrastructure during construction shall be at the Contractor's risk. Repair, or remove and provide new pipe and infrastructure for existing or newly installed pipe and infrastructure that has been displaced or damaged.

### 3.2 SURFACE PREPARATION

#### 3.2.1 Clearing and Grubbing

Unless indicated otherwise, remove vegetation and other items that would interfere with construction operations within the within lines 5 feet typical maximum outside of the new pipeline location. Remove stumps entirely. Grub out matted roots and roots over 2 inches in diameter to at least 18 inches below existing surface.

#### 3.2.2 Stripping

Strip suitable soil from the site where excavation or grading is indicated and stockpile separately from other excavated material. Locate topsoil so that the material can be used readily for the finished grading. Protect topsoil and keep in segregated piles until needed.

#### 3.2.3 Unsuitable Material

Remove vegetation, debris, decayed vegetative matter, sod, mulch, and rubbish underneath paved areas or concrete slabs. Dispose of at a location defined by the COTR located within 5 miles of the project work area.

### 3.3 EXCAVATION

Excavate to contours, elevation, and dimensions indicated. Reuse excavated materials that meet the specified requirements for the material type required at the intended location. Keep excavations free from water. Excavate soil disturbed or weakened by Contractor's operations, soils softened or made unsuitable for subsequent construction due to exposure to weather. Excavations below indicated depths will not be permitted except to remove unsatisfactory material. Contractor shall notify COTR immediately when unsatisfactory material encountered below the grades shown and shall be removed as directed in writing. Refill with backfill and fill material and compact to 95 percent of ASTM D 698 maximum density. Unless specified otherwise, refill excavations cut below indicated depth with backfill and fill material and compact to 95 percent of ASTM D 698 maximum density. Satisfactory material removed below the depths indicated, without specific direction of the COTR, shall be replaced with satisfactory materials to the indicated excavation grade. Determination of elevations and measurements of approved overdepth excavation of unsatisfactory material below grades indicated shall be done under the direction of the COTR.

#### 3.3.1 Pipe Trenches

Excavate to the dimension indicated. Grade bottom of trenches to provide uniform support for each section of pipe after pipe bedding placement. Tamp if necessary to provide a firm pipe bed. Recesses shall be excavated to accommodate bells and joints so that pipe will be uniformly supported for the entire length.

#### 3.3.2 Excavated Materials

Satisfactory excavated material required for fill or backfill shall be placed in the proper section of the permanent work required or shall be separately stockpiled if it cannot be readily placed. Satisfactory material in excess of that required for the permanent work and all unsatisfactory material shall be disposed of as specified in Paragraph "DISPOSITION OF



SURPLUS MATERIAL."

### 3.3.3 Final Grade of Surfaces to Support Concrete and Roadway Pavement/Shoulder

Excavation to final grade shall not be made until just before final grade materials are to be placed.

### 3.4 SUBGRADE PREPARATION

Unsatisfactory material in surfaces to receive fill or in excavated areas shall be removed and replaced with satisfactory materials as directed by the COTR. The surface shall be scarified to a depth of 6 inches before the fill is started. When the subgrade is part fill and part excavation or natural ground, the excavated or natural ground portion shall be scarified to a depth of 12 inches and compacted as specified for the adjacent fill. Material shall not be placed on surfaces that are muddy, frozen, or contain frost. Compaction shall be accomplished by sheepsfoot rollers, pneumatic-tired rollers, steel-wheeled rollers, or other approved equipment well suited to the soil being compacted. Material shall be moistened or aerated as necessary to provide the moisture content that will readily facilitate obtaining the specified compaction with the equipment used.

### 3.5 FILLING AND BACKFILLING

Fill and backfill to contours, elevations, and dimensions indicated. Compact each lift before placing overlaying lift.

#### 3.5.1 Select Material Placement

Provide for roadway shoulder restoration and elsewhere as indicated in drawings. Place in 6 inch lifts. Do not place over wet or frozen areas. Backfill adjacent to structures shall be placed as structural elements are completed and accepted. Backfill against concrete only when approved. Place and compact material to avoid loading upon or against structure.

#### 3.5.2 Backfill and Fill Material Placement Over Pipes and at Walls

Backfilling shall not begin until construction below finish grade has been approved, underground utilities systems have been inspected, tested and approved, forms removed, and the excavation cleaned of trash and debris. Backfill shall be brought to indicated finish grade. Backfill material up to an elevation 1 foot above utility lines shall be free from stones larger than 1 inch in any dimension. Compact in layers not more than 6 inches in compacted thickness with power-driven hand tampers suitable for the material being compacted. Backfill shall be placed carefully around pipes to avoid damage. As far as practicable, backfill shall be brought up evenly on each side of the pipe and sloped to drain away from the wall.

#### 3.5.3 Trench Backfilling

Backfill as rapidly as construction, testing, and acceptance of work permits. Place and compact backfill under structures and paved areas in 6 inch lifts to top of trench and in 6 inch lifts over pipe outside structures and paved areas.

### 3.6 JACK AND BORE EXECUTION

#### 3.6.1 Inspection

Casing pipe to be installed may be inspected for compliance with these Specifications by an independent laboratory selected and paid for by the Government. The manufacturer's cooperation shall be required in these inspections. All casing pipe shall be subjected to a careful inspection prior to being installed. If the pipe fails to meet these Specifications, Contractor shall remove and replace with a satisfactory replacement at no additional cost to the Government.

#### 3.6.2 Pipe Handling

Care shall be taken in loading, transporting, and unloading to prevent damage to the pipe or coatings. Pipe shall not be dropped. All pipes shall be examined before lying and no piece shall be installed which is found to be defective. Any damage to the pipe or coatings shall be repaired or replaced to the satisfaction of the COTR.

#### 3.6.3 Installation and Construction Requirements

- a. Contractor shall coordinate with the Construction Manager to schedule and perform boring and jacking work in strict conformance with Stennis Space Center requirements. Any special requirements of the agency such as insurance, flagmen, etc., shall be strictly adhered to during the performance of Work. All requirements shall be performed by the Contractor at no additional cost to the Government.
- b. Dewatering through the casing during construction shall not be permitted. The Construction Manager shall approve all dewatering methods before construction work begins.
- c. Contractor shall provide adequate erosion and sedimentation control measures around the jacking and receiving pits. Adequate protection shall be provided to protect the edges of the roadway from erosion or caving.
- d. Carrier pipes shall be supported within the casing pipes so that the pipe bells do not rest directly on the casing. The load of the carrier pipes shall be distributed along the casing spacers. Casing spacers shall be bolt on style split shells made of Type 304 stainless steel. All nuts and bolts shall be high strength, low alloy meeting AWWA C111. Runners shall be made of a high molecular weight polymer with inherent high abrasion resistance and a low coefficient of friction.
- e. Excavation adjacent to the roads shall be performed in a manner to adequately support the roads. Bracing, shoring, sheeting or other supports shall be installed as needed. Contractor shall install suitable reaction blocks for the jacks as required. Jacking and boring operations shall be continuous and precautions shall be taken to avoid extended interruptions which might cause the casing pipe to "freeze" in place. If a casing installation is halted while under a roadway, then the entire casing shall be abandoned and pressure grouted with 10:1 sand-cement mix. Upon completion of jacking operations, the reaction blocks, braces and all other associated construction materials shall be completely removed from

the site.

- f. The sections of steel casing pipe shall be field welded in accordance with the applicable portions of AWWA C206 for field welded pipe joints. The Contractor shall wire brush the welded joints and coat with an approved material. After completion of jacking, the Contractor shall clean the interior of the casing of all excess material.
- g. Correct line and grade shall be carefully maintained during jacking and boring operations. Earth within the casing shall not be removed too close to the cutting edge in order to prevent the formation of voids outside the casing. If voids are formed, they shall be satisfactorily filled with grout by pumping.
- h. As-built variance from the designed casing alignment shall not exceed  $\pm 0.5$  foot in the vertical plane and  $\pm 1$  foot in the horizontal plane. Contractor shall submit any proposed deviations from the designed jack and bore alignment with shop drawings. Casing pipe alignment that does not meet the aforementioned tolerances shall be a considered defective. The COTR may require such defective casing pipe to be replaced by the Contractor with non-defective pipe at no additional cost to the Government.
- i. If unexpected subsurface conditions are encountered during the jacking and boring operation, the procedure shall be stopped. The installation shall not continue until the COTR and Construction Manager have been consulted.
- j. The casing pipe shall be installed in a manner that does not cause upheaval, settlement, cracking, movement or distortion of surface features. Any damages caused by the jacking and boring operation shall be corrected by the Contractor, at no additional cost to the Government.
- k. Casing end seals shall be installed at each open end of the casing following installation of the carrier pipe. The end seals shall be suitable for restraining the earth load.

### 3.7 BURIED WARNING AND IDENTIFICATION TAPE

Provide buried utility lines with utility identification tape. Bury tape 12 inches below finished grade; under pavements and slabs, bury tape 6 inches below top of subgrade.

### 3.8 BURIED DETECTION WIRE

Bury detection wire directly above non-metallic piping at a distance not to exceed 3 inches above the top of pipe. The wire shall extend continuously and unbroken, from valve to valve. The ends of the wire shall terminate inside the valve at each end of the pipe, with a minimum of 3 feet of wire, coiled, remaining accessible. The wire shall remain insulated over its entire length. This requirement applies to all new pipe installation regardless of installation method.

### 3.9 COMPACTION

Determine in-place density of existing subgrade; if required density exists, no compaction of existing subgrade will be required.

### 3.9.1 General Site

Compact off roadway backfill areas designated for vegetation and areas outside the 8 foot line of the paved area or structure to 90 percent of either ASTM D 698 or ASTM D 1557 as appropriate.

### 3.9.2 Paved Areas

Compact top 12 inches of subgrades to 95 percent of either ASTM D 698 or ASTM D 1557 as appropriate. Compact fill and backfill materials to 95 percent of either ASTM D 698 or ASTM D 1557 as appropriate.

## 3.10 FINISH OPERATIONS

### 3.10.1 Grading

Finish grades as indicated within one-tenth of one foot. Grade areas to drain water away from structures. Maintain areas free of trash and debris. For existing grades that will remain but which were disturbed by Contractor's operations, grade as directed.

### 3.10.2 Topsoil and Seed

Additional topsoil will not be required if work is performed in compliance with stripping and stockpiling requirements. Seed shall match existing vegetation. Provide seed at 5 pounds per 1000 square feet. Provide CID A-A-1909, Type I, Class 2, 10-10-10 analysis fertilizer at 25 pounds per 1000 square feet. Provide mulch and water to establish an acceptable stand of grass.

### 3.10.3 Protection of Surfaces

Protect newly backfilled, graded, and topsoiled areas from traffic, erosion, and settlements that may occur. Repair or reestablish damaged grades, elevations, or slopes.

## 3.11 DISPOSITION OF SURPLUS MATERIAL

Remove from work area surplus or other soil material not required or suitable for filling or backfilling, and brush, refuse, stumps, roots, and timber. COTR shall designate the disposal area within 5 miles of the work area.

## 3.12 FIELD QUALITY CONTROL

### 3.12.1 Sampling

Take the number and size of samples required to perform the following tests.

### 3.12.2 Testing

Perform one of each of the following tests for each material used. Provide additional tests for each source change.

#### 3.12.2.1 Fill and Backfill Material Testing

Test fill and backfill material in accordance with ASTM C 136 for conformance to ASTM D 2487 gradation limits; ASTM D 1140 for material finer

than the No. 200 sieve; ASTM D 4318 for liquid limit and for plastic limit; ASTM D 698 or ASTM D 1557 for moisture density relations, as applicable.

#### 3.12.2.2 Select Material Testing

Test select material in accordance with ASTM C 136 for conformance to ASTM D 2487 gradation limits; ASTM D 1140 for material finer than the No. 200 sieve; ASTM D 698 or ASTM D 1557 for moisture density relations, as applicable.

#### 3.12.2.3 Density Tests

Test density in accordance with ASTM D 6938. Include density test results in daily report. Bedding and backfill in trenches: One test per 200 linear feet in each lift.

-- End of Section --

## SECTION 33 05 23.13

## UTILITY HORIZONTAL DIRECTIONAL DRILLING

## PART 1 GENERAL

## 1.1 REFERENCES

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

## ASTM INTERNATIONAL (ASTM)

ASTM D 1557 (2009) Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft<sup>3</sup>) (2700 kN-m/m<sup>3</sup>)

## STENNIS SPACE CENTER STANDARDS (SSC)

SSTD-8070-0119-MISC (Dec. 2009) Rev. A, John C. Stennis Space Center Dig Permit Standard (Form SSC-618)

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

29 CFR 1926.652 Safety and Health Regulations for Construction; Subpart P, Excavations; Requirements for Protective Systems

## 1.2 SUBMITTALS

Government approval is required for all submittals. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

## SD-01 Preconstruction Submittals

Statement of Qualifications and Records for previous similar jobs.

Soil Test Data prior to commencement of drilling/excavation work.

Geotechnical Investigation Plan

## SD-02 Shop Drawings

Record Drawings

## SD-03 Product Data

Submit Manufacturer's Catalog Data for the polyethylene pipe.

Material Safety Data Sheets

## SD-06 Test Reports

Geotechnical Investigation Report

## SD-07 Certificates

Drill Rod

## SD-11 Closeout Submittals

Work Complete Logs of Guided Directional Drill Operations

## 1.3 COMMENCEMENT, DELIVERY, STORAGE, AND HANDLING OF MATERIALS

Prior to commencement of the work, submit the following to the Contracting Officers' Technical Representative (COTR) for review and approval:

Manufacturer's Catalog Data

Material Safety Data Sheets

Statement of Qualifications and Records

Soil Test Data

Provide written documentation of conformance with ASTM D 1557. Submit a complete list of all drilling fluids, additives, and mixtures to be used along with Material Safety Data Sheets.

Inspect materials delivered to the site for damage. All materials found during inspection or during the progress of work to have cracks, flaws, surface abrasions, or other defects will be rejected. Remove defective materials from the job site.

Disposal of fluids is the responsibility of the Contractor. Dispose of fluids in a manner that is in compliance with all permits and applicable federal, state, and local regulations. The Contractor may dispose of the drilling fluids on approved land owned by the Government subject to written approval from the Contracting Officer's Technical Representative (COTR). Spread the drilling slurry over the Government-approved disposal area and plow into the soil.

## 1.4 QUALIFICATIONS

Submit a statement of qualifications and records demonstrating a minimum of three (3) years of experience performing similar projects.

Ensure that Contractor and his field supervisor assigned to this project are experienced in work of this nature and have successfully completed three (3) similar projects of similar length, pipe type, pipe size, and soil type using directional drilling in the last three (3) years. As part of the bid submission, submit a description of such project(s) which include, at a minimum, a listing of the location(s), date of project(s), owner, pipe type, size installed, length of installation, type, and manufacturer of equipment used, and other information relevant to the successful completion of the project.

## 1.5 SAFETY

Include in directional drilling equipment machine safety requirements a common grounding system to prevent electrical shock in the event of underground electrical cable strike. Ensure the grounding system connects all pieces of interconnecting machinery; the drill, mud mixing system,

drill power unit, drill rod trailer, operators booth, worker grounding mats, and any other interconnected equipment to a common ground. Equip the drill with an "electrical strike" audible and visual warning system that notifies the system operators of an electrical strike.

#### 1.6 SUBSURFACE CONDITIONS

Subsurface conditions in the work area vary over the length of pipe installation project. The Contractor is responsible for verifying existing site conditions and preserving all existing infrastructure to condition and function at the time of contracted work. These items are shown on Contract drawings based on best available information during project design.

In general, new pipe will be installed within an existing utility corridor. All utility systems and lines shall be considered active unless notified in writing by the COTR. New pipe placement shall be adjacent to an existing, active potable water transmission system. Portions of new pipe installation will occur within 8 feet of paved roadway within and under associated structural bedding. Drainage ditches parallel the existing roadway and other ditches crossing the new pipe installation are shown on the drawings.

Soil conditions away from and under roadways varies. In general, the top 6 inches to 1 foot contains turf and organics mixed with soil. From ground surface to 15 feet plus/minus below ground surface soil is loose to medium silty clayey sand transitioning through medium sandy, silty, clay to poorly graded sand and silty sand. Below 15 feet, medium to dense poorly graded sand prevails with some lean to fat clay lenses of varying thickness typically less than 5 feet. Much of the subsurface soil to 10 feet below ground surface has been disturbed by previous construction. Typical depth to groundwater is within 10 feet of ground surface and varies by location and degree of drought.

Limited additional geotechnical information is available on request.

Contractor is responsible for acquiring all necessary geotechnical information required to install pipe and needed shoring / sheeting.

#### 1.7 BOREHOLE/OBSTRUCTION CLEAR DISTANCE

Contractor is responsible for assuring that borehole construction does not damage existing infrastructure. In any case, no portion of the borehole shall come closer than 2 feet horizontally or vertically to any existing infrastructure.

### PART 2 PRODUCTS

#### 2.1 DRILL ROD

Select the appropriate drill rod to be used. Submit certified statement that the drill rod has been inspected and is in satisfactory condition for its intended use.

#### 2.2 PRODUCT

Install high density polyethylene pipe (HDPE), designation PE 4710, ductile iron pipe size (DIPS) sized as shown on drawings with a dimensions ratio of 11 (DR11).



### 2.3 DRILLING FLUIDS

Use a high quality drilling fluid to ensure hole stability, cuttings transport, bit and electronics cooling, and hole lubrication to reduce drag on the drill pipe and the product pipe. Use only fluid with a composition which complies with all federal, state, and local environmental regulations.

Mix the drilling fluid with potable water (of proper pH) to ensure no contamination is introduced into the soil during the drilling, reaming, or pipe installation process. The Contractor is responsible for any required pH adjustments.

Disposal of the drilling fluids and associated boring cuttings is the responsibility of the Contractor. Conduct disposal in compliance with all relative environmental regulations, right-of-way and work space agreements, and permit requirements. Coordinate disposal location and conditions with the COTR. Disposal shall occur within 5 miles of the work location.

Collect drilling fluid returns in the entrance pit, exit pit, or spoils recovery pit. Immediately clean up any drilling fluid spills or overflows from these pits.

## PART 3 EXECUTION

### 3.1 DRILL SET-UP AREA

The Contractor is responsible for design and construction of the drill entrance and exit pits.

### 3.2 DRILL ENTRANCE AND EXIT PITS

Drill entrance and exit pits are required. Maintain at minimum size to allow only the minimum amount of drilling fluid storage prior to transfer to mud recycling or processing system or removal from the site.

Do not allow drilling mud to flow freely on the site or around the entrance or exit pits. Remove spilled mud and restore ground to original condition. Provide shore pits as needed in compliance with OSHA Standards, 29 CFR 1926.652.

When drilling near wetlands or water courses, provide secondary containment to prevent drilling fluids from entering the wetlands, and secure written approval of secondary containment plan from the COTR.

### 3.3 DRILL ENTRANCE AND EXIT ANGLE

Ensure entrance and exit angles and elevation profile maintains adequate cover to reduce risk of drilling fluid breakouts and ground exit occurs as specified herein. Ensure that entrance and exit angles ensure pullback forces do not exceed 5 percent strain on the polyethylene pipe.

### 3.4 PILOT HOLE

The type and size of the pilot string cutting head and the diameter of the drill pipe is at the Contractor's discretion.

Drill the pilot hole along the path shown on the plan and profile drawings. Pilot hole tolerances are as follows:

- a. Vertical Tolerance: Provide minimum cover as specified on the plans. The Contractor may go deeper if necessary to prevent breakout.
- b. Horizontal Tolerance: plus/minus - 24 inches from the centerline of the product pipe.
- c. Curve Radius: Minimum radius per pipe manufacturer's recommendations.
- d. Entry Point Location: Make pilot hole entry point within plus/minus - 60 inches of the location shown on the drawings or as directed by the COTR in the field.
- e. Exit Point Location: Make the exit point location within plus/minus - 60 inches of the location shown on the drawings or as directed by the COTR in the field.
- f. The installed pipeline cover requirements as shown on the drawings or as specified is mandatory. The Contractor may install the pipeline to a lower depth than shown on the drawings at own option. No additional compensation will be provided to the Contractor for the deeper installation or for additional expenses for connections to piping impacted.

Tolerances are provided as guidance for maximum allowable deviation. Preservation of infrastructure prevails in all cases.

### 3.5 REAMING

Conduct reaming operations at the Contractor's discretion. Determine the type of back reamer to be utilized by the type of subsurface soil conditions that are encountered during the pilot hole drilling operation. The reamer type is at the Contractor's discretion.

### 3.6 PULL BACK

Fully assemble the entire pipeline to be installed via direction drill prior to commencement of pull back operations.

Support the pipeline during pullback operations in a manner to enable it to move freely and prevent damage. Install the pipeline in one continuous pull.

Minimize torsion stress by using a swivel to connect the pull section to the reaming assembly.

Maximum allowable tensile force imposed on the pull section is not to exceed 95 percent of the pipe manufacturer's safe pull (or tensile) strength. If the pull section is made up of multiple pipe size or materials, the lowest safe pull strength value governs and the maximum allowable tensile force is not to exceed 90 percent of this value.

Minimize external pressure during installation of the pullback section in the reamed hole. Replace damaged pipe resulting from external pressure at no cost to the Government. Buoyancy modification is at the discretion of the Contractor. Contractor shall obtain COTR approval for discharge of water used for buoyancy modification.

### 3.7 CONNECTION OF PRODUCT PIPE TO WATER LINE

After the product pipe has been successfully installed, allow the product pipe to recover for 24 hours prior to connection of the water line. The Contractor is responsible for ensuring that a sufficient length of the product pipe has been pulled through the hole so that the pull-nose is not pulled back into bore hole due to stretch recovery of the product pipe.

### 3.8 GUIDANCE SYSTEMS

Walkover and non-walkover guidance systems are acceptable for this project. Contractor shall use necessary equipment and measures to assure bore hole cutter head is within 1 foot +/- of intended location.

### 3.9 DOCUMENTATION

Maintain drilling logs that accurately provide drill bit location (both horizontally and vertically) at least every 1 foot along the drill path. In addition, keep logs that record, as a minimum the following, every 15 minutes throughout each drill pass, back ream pass, or pipe installation pass:

- a. Drilling Fluid Pressure
- b. Drilling Fluid Flow Rate
- c. Drill Thrust Pressure
- d. Drill Pullback Pressure
- e. Drill Head Torque

Make all instrumentation, readings, and logs available to the COTR at all times during operation.

### 3.10 UTILITY LOCATING AND MARKING

Locate and clearly mark all utilities prior to start of excavation or drilling. The Contractor is responsible for damage to utilities, and repairs for such damages, at no cost to the Government. Contractor shall locate utilities in accordance with Stennis Standard SSTD-8070-0119-MISC, Dig Permit Standard. Horizontal Direction Drilling is considered excavation and all associated requirements apply, including "Known or questionable interferences shall be "Hand-Dug" within 1.8 m (6 feet) of the interference" (Refer to Section 5.2.3).

### 3.11 CLEANUP AND FINAL CLOSEOUT

Immediately upon completion of work of this section, remove all rubbish and debris from the job site. Remove all construction equipment and implements of service leaving the entire area involved in a neat condition acceptable of the COTR.

Immediately clean "blow holes" or "breakouts" of drilling fluid to the surface and return the surface area to its original condition. Dispose of all drilling fluids, soils, and separated materials in compliance with federal, state, and local environmental regulations.

Submit a electronic copy and hard copies of the record drawings to the COTR

within five days after completing the pull back in accordance with Section 01 33 00 SUBMITTAL PROCEDURES. Include in the record drawings a plan, profile, and all information recorded during the progress of the work. Clearly tie the record drawings to the project's survey control. Maintain and submit upon completion signed final work complete logs of guided directional drill operations.

-- End of Section --

## SECTION 33 11 00

## WATER DISTRIBUTION

## PART 1 GENERAL

## 1.1 REFERENCES

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

## AMERICAN WATER WORKS ASSOCIATION (AWWA)

AWWA C502	(2005) Dry-Barrel Fire Hydrants
AWWA C515	(2009) Standard for Reduced-Wall, Resilient-Seated Gate Valves for Water Supply Service
AWWA C651	(2005; Errata 2005) Standard for Disinfecting Water Mains
AWWA C655	(2009) Field Dechlorination
AWWA C901	(2008) Polyethylene (PE) Pressure Pipe and Tubing, 1/2 In. (13mm) Through 3 In. (76 mm), for Water Service
AWWA C906	(2007) Polyethylene (PE) Pressure Pipe and Fittings, 4 In. (100 mm) through 63 In., (1,575 mm) for Water Distribution and Transmission
AWWA M55	(2006) PE Pipe - Design and Installation

## ASTM INTERNATIONAL (ASTM)

ASTM A 285	(2003; R 2007) Standard Specification for Pressure Vessel Plates, Carbon Steel, Low- and Intermediate-Tensile Strength
ASTM A 536	(1984; R 2009) Standard Specification for Ductile Iron Castings
ASTM F 2620	(2010) Heat Fusion Joining Polyethylene Pipe and Fittings
ASTM D 2774	(2008) Underground Installation of Thermoplastic Pressure Piping
ASTM D 3261	(2010a) Standard Specification for Butt Heat Fusion Polyethylene (PE) Plastic Fittings for Polyethylene (PE) Plastic Pipe and Tubing
ASTM D 3350	(2010a) Polyethylene Plastics Pipe and

## Fittings Materials

ASTM F 2164	(2010) Field Leak Testing of Polyethylene (PE) Pressure Pipe Systems Using Hydrostatic Pressure
ASTM F 2620	(2010) Heat Fusion Joining Polyethylene Pipe and Fittings
ASTM F 714	(2010) Polyethylene (PE) Plastic Pipe (SDR-PR) Based on Outside Diameter

## UNDERWRITERS LABORATORIES (UL)

UL 262	(2004; R 2008) Gate Valves for Fire-Protection Service
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## 1.2 DESIGN REQUIREMENTS

## 1.2.1 Water Distribution Mains

Provide water distribution mains of high density polyethylene (HDPE) pipe. Provide water main accessories, gate valves and check valves as specified and where indicated.

## 1.2.2 Disinfection Plan and Procedures

Submit a plan with procedures providing details for completing disinfection of new pipe and appurtenances in accordance with AWWA C651. Also include details for reducing chloride content in wastewater prior to discharge in accordance with AWWA C655

## 1.2.3 Hydrostatic Pressure Testing Plan

Submit a plan with procedures providing details for completing hydrostatic pressure / leak testing of new HDPE pipe and appurtenances in accordance with AWWA M55 and ASTM F 2164.

## 1.2.4 HDPE Pipe and Fitting Fusion Quality Control Plan

Submit a plan providing details for assuring applicable fusion procedures are correctly implemented. In general, applicable practice and procedures defined in AWWA M55, AWWA C906, and ASTM F 2620 apply - Contractor shall clearly identify any exceptions. Incorporate procedures for cold or inclement weather. Include a weld evaluation procedure (beyond leak testing), performance standards, evaluation frequency, and example fusion test report. Incorporate use of a minimum of two (2) sample joints on full size pipe in advance of pipe installation to demonstrate fusion methods, welder capability, and equipment operation. Additional sample joints shall be completed during pipe installation as welding personnel and/or equipment change and for periodic routine evaluation of performance.

## 1.2.5 Pipe Abandonment Plan

Submit written plan containing the method, procedures, equipment list, and details for abandoning existing transite pipe in-place. Pipe to be abandoned in place is labeled on the Contract Drawings. Abandoned pipe shall be filled with flowable fill meeting Mississippi Department of Transportation (MDOT) technical requirements as contained in the Standard

Specifications for Road and Bridge Construction, Section 631 (note that the Basis of Payment provisions do not apply). The plan shall include information defining any required additional excavation and pipe cutting necessary to access pipe as needed to complete filling work. Flowable fill shall have a minimum compressive strength of 50 psi and maximum compressive strength of 250 psi at 56 days after placement. Submit the flowable fill mix design.

### 1.3 SUBMITTALS

Government approval is required for all submittals. The following shall be submitted in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

#### SD-01 Preconstruction Submittals

Electrofusion Procedure and Equipment List

Butt Fusion Procedure and Equipment List

Hydrostatic Pressure Testing Plan

Disinfection Plan and Procedures

Fusion Welder's Qualifications

HDPE Pipe and Fitting Fusion Quality Control Plan

Fusion Equipment List

Pipe Abandonment Plan

Flowable Fill Mix Design

#### SD-03 Product Data

Piping Materials

Water distribution main piping, fittings, joints, valves, and couplings

Hydrants

Valve boxes

Submit manufacturer's standard drawings or catalog cuts.

#### SD-06 Test Reports

Bacteriological Disinfection

Test results from commercial laboratory verifying disinfection

#### SD-07 Certificates

Water distribution main piping, fittings, joints, valves, and couplings

Fire hydrants

Certificates shall attest that tests set forth in each applicable referenced publication have been performed, whether specified in that publication to be mandatory or otherwise and that production control tests have been performed at the intervals or frequency specified in the publication. Other tests shall have been performed within 3 years of the date of submittal of certificates on the same type, class, grade, and size of material as is being provided for the project.

#### SD-08 Manufacturer's Instructions

Delivery, storage, and handling

Installation procedures for water piping, HDPE Pipe and Fiting  
Fusion transition couplings, and mechanical joint restraints

### 1.4 DELIVERY, STORAGE, AND HANDLING

#### 1.4.1 Delivery and Storage

Inspect materials delivered to site for damage. Unload and store with minimum handling. Store materials on site in enclosures or under protective covering. Store HDPE piping and fittings under cover out of direct sunlight. Do not store materials directly on the ground. Keep inside of pipes, fittings, valves and hydrants free of dirt and debris.

#### 1.4.2 Handling

Handle pipe, fittings, valves, hydrants, and other accessories in a manner to ensure delivery to the trench in sound undamaged condition. Carry, do not drag pipe to the trench. Use of pinch bars and tongs for aligning or turning pipe will be permitted only on the bare ends of the pipe. The interior of pipe and accessories shall be thoroughly cleaned of foreign matter before being lowered into the trench and shall be kept clean during laying operations by plugging or other approved method. Before installation, the pipe shall be inspected for defects. Material found to be defective before or after laying shall be replaced with sound material without additional expense to the Government. Store rubber gaskets that are not to be installed immediately, under cover out of direct sunlight.

##### 1.4.2.1 Polyethylene (PE) Pipe, Fittings, and Accessories

Handle PE pipe, fittings, and accessories in accordance with AWWA C901 and AWWA C906.

## PART 2 PRODUCTS

### 2.1 WATER DISTRIBUTION MAIN MATERIALS

#### 2.1.1 Piping Materials

##### 2.1.1.1 High Density Polyethylene (HDPE) Plastic Piping

Pipe, tubing, and heat-fusion fittings shall conform to AWWA C906 and AWWA C901.

Pipe shall be manufactured from a PE 4710 resin listed with the Plastic Pipe Institute (PPI) as TR-4. The resin material will meet the specifications of ASTM D 3350 with a minimum cell classification of PE



45474 C or higher. Pipe shall have a manufacturing standard of ASTM F 714.

The pipe shall contain no recycled compounds except that generated in the manufacturer's own plant from resin of the same specification from the same raw material. All pipes shall be suitable for use as pressure conduits, listed as NSF 61, and per AWWA C906 Pressure Class to have a nominal burst value of three and one-half times the Working Pressure Rating (WPR) of the pipe.

All HDPE pipe to be installed by "Open Cut" methods will be Ductile Iron Pipe Size (DIPS) Dimension Ratio (DR) DR17. All HDPE pipe to be installed by horizontal directional drilling will be DIPS DR11.

#### 2.1.1.2 HDPE Fittings

Butt Fusion Fittings - Fittings shall be PE 4710 with a minimum cell classification of PE 445474 C or higher as determined by ASTM D 3350, and approved for AWWA use. Butt Fusion Fittings shall have a manufacturing standard of ASTM D 3261. Fittings shall have a pressure rating equal to the pipe unless otherwise specified in the plans. Fabricated fittings are to be manufactured using Data Loggers. Temperature, fusion pressure and a graphic representation of the fusion cycle shall be part of the quality control records. All fittings shall be suitable for use as pressure conduits, and per AWWA C906, have nominal burst values of three and one-half times the Working Pressure Rating (WPR) of the fitting.

Electrofusion Fittings - Fittings shall be PE 4710 with a minimum cell classification of PE 445474 C or higher as determined by ASTM D 3350. Electrofusion fittings shall have a manufacturing standard of ASTM F 1055. Fittings shall have a pressure rating equal to the pipe unless otherwise specified on the plans. All electrofusion fittings shall be suitable for use as pressure conduits, and per AWWA C906, have nominal burst values of three and one-half times the Working Pressure Rating (WPR) of the fitting.

Flanged and Mechanical Joint Adapters - Flanged and Mechanical Joint Adapters shall be PE 4710 with a minimum cell classification of PE 445474 C or higher as determined by ASTM D 3350. Flanged and mechanical Joint Adapters shall have a manufacturing standard of ASTM D 3261. Fittings shall have a pressure rating equal to the pipe unless otherwise specified on the plans.

All HDPE fittings shall be DR11.

#### 2.1.2 Valves, Hydrants, and Other Water Main Accessories

##### 2.1.2.1 Gate Valves on Buried Piping

AWWA C515. Unless otherwise specified, valves conforming to: (1) AWWA C515 shall be nonrising stem type with resilient-sealed wedge gates and mechanical joints as appropriate for the adjoining pipe, designed for a hydraulic working pressure of 125 psi, and shall have mechanical joint ends as appropriate for the pipe to which it is joined. Valves shall open by counterclockwise rotation of the valve stem. Stuffing boxes shall have O-ring stem seals. Stuffing boxes shall be bolted and constructed so as to permit easy removal of parts for repair. Valves shall be of one manufacturer.

#### 2.1.2.2 Vacuum and Air Relief Valves

Vacuum and air relief valves shall be of the size shown and shall be of a type that will release air and prevent the formation of a vacuum. The valves shall automatically release air when the lines are being filled with water and shall admit air into the line when water is being withdrawn in excess of the inflow. Valves shall be ARI Model ARI-D-040 or approved equal. Air relief valve enclosure shall be Water Plus Model 171730 or approved equal.

#### 2.1.2.3 Fire Hydrants

Dry-barrel type, except that flush-type hydrants shall be provided where indicated. Paint hydrants with at least one coat of primer and two coats of yellow enamel paint. Stencil hydrant number and main size on the hydrant barrel using black stencil paint.

Dry-Barrel Type Fire Hydrants: Dry-barrel type hydrants, AWWA C502, compliance with NSF/ANSI drinking water system components-health effects required, "Base Valve" design, shall have 6 inch inlet, 5-1/4 inch valve opening, one 4-1/2 inch pumper connection, and two 2-1/2 inch hose connections. Inlet shall have mechanical-joint end shall conform to the applicable requirements as specified for the joint. Size and shape of operating nut, cap nuts, and threads on hose and pumper connections shall be as specified in AWWA C502. Mueller Super Centurion 250, A-423, or approved equal.

#### 2.1.2.4 Valve Boxes

Provide a valve box for each gate valve on buried piping. Valve boxes shall be of cast iron of a size suitable for the valve on which it is to be used and shall be adjustable. Cast-iron boxes shall have a minimum cover and wall thickness adequate for heavy duty or traffic-rating service. Provide a round head. Cast the word "WATER" on the lid. The least diameter of the shaft of the box shall be 5 1/4 inches. Cast-iron box shall have a heavy coat of bituminous paint.

#### 2.1.2.5 Mechanical Couplings

Couplings for joining HDPE plain end pipe to existing transite plain end pipe shall be mechanical type coupling assembly containing a compressed ring gasket at each end of the adjoining pipe sections and a restrainer assembly for each pipe type. The coupling shall consist of one middle ring flared or beveled at each end to provide a gasket seat; two follower rings; two resilient tapered rubber gaskets; nuts and track bolts to draw the follower rings toward each other and compress the gaskets, and a stainless steel stiffener ring to insert inside the HDPE pipe. Restrainer assemblies shall be tied together with 2-3/4 inches all-thread rods. Transite pipe restrainer assembly shall be made from ASTM carbon steel meeting the requirements of ASTM A 285. HDPE pipe restrainer, sleeve, and flange shall be ductile iron meeting the requirements ASTM A 536. The gasket will be NSF approved polymer resistant to permanent set. Bolt, nuts, and washers shall be 316 stainless steel. Coupling shall be designed for a working pressure of 150 psi. Coupling shall be as manufactured by JCM Industries, Nash, Texas or approved equal. Thrust blocks per the contract drawings are required at the nearest HDPE fitting to the mechanical coupling. No allowance for any restraint provided by the coupling will be accounted for.

#### 2.1.2.6 Tracer Wire for Nonmetallic Piping

Provide bare copper or aluminum wire not less than 0.10 inch in diameter in sufficient length to be continuous over each separate run of nonmetallic pipe. Install tracer wire for all methods of pipe installation, trenched or trench-less.

### PART 3 EXECUTION

#### 3.1 INSTALLATION OF PIPELINES

##### 3.1.1 General Requirements for Installation of Pipelines

These requirements shall apply to all pipeline installation except where specific exception is made in the "Special Requirements..." paragraphs.

The water main and sewer main should be separated by 10 feet horizontally and 18 inches vertically with the water main above the sewer main. The water main should not be installed below the sewer main. If this separation cannot be maintained, each situation shall be reviewed with the Construction Manager and Registered Engineer on a case by case basis

##### 3.1.1.1 Location of Water Lines

Terminate the work covered by this section at the point indicated. Where the location of the water line is not clearly defined by dimensions on the drawings, do not lay water line closer horizontally than 10 feet from any sewer line. Lay water lines which cross sewer force mains and inverted siphons at least 2 feet above these sewer lines; when joints in the sewer line are closer than 3 feet horizontally from the water line, encase these joints in concrete.

###### a. Water Piping Installation Parallel With Sewer Piping

(1) Normal Conditions: Lay water piping at least 10 feet horizontally and 18 inches vertically from a sewer or sewer manhole whenever possible. Measure the distance edge-to-edge.

(2) Unusual Conditions: When local conditions prevent a horizontal separation of 10 feet, the water piping may be laid closer to a sewer or sewer manhole provided that:

(a) The bottom (invert) of the water piping shall be at least 18 inches above the top (crown) of the sewer piping.

(b) Where this vertical separation cannot be obtained, the sewer piping shall be constructed of AWWA-approved water pipe and pressure tested in place without leakage prior to backfilling. Approved waste water disposal method shall be utilized.

(c) The sewer manhole shall be of watertight construction and tested in place.

###### b. Installation of Water Piping Crossing Sewer Piping

(1) Normal Conditions: Water piping crossing above sewer piping shall be laid to provide a separation of at least 18 inches between the bottom of the water piping and the top of the sewer piping.

(2) Unusual Conditions: When local conditions prevent a vertical separation described above, Contractor shall notify the COTR in writing the same of discovery. The COTR shall provide direction for action.

- c. Sewer Piping or Sewer Manholes: No water piping shall pass through or come in contact with any part of a sewer manhole.

#### 3.1.1.2 Earthwork

Perform earthwork operations in accordance with Section 31 23 00.00 20 EXCAVATION AND FILL.

#### 3.1.1.3 Pipe Laying and Jointing

Remove fins and burrs from pipe and fittings. Before placing in position, clean pipe, fittings, valves, and accessories, and maintain in a clean condition. Provide proper facilities for lowering sections of pipe into trenches. Do not under any circumstances drop or dump pipe, fittings, valves, or any other water line material into trenches. Cut pipe in a neat workmanlike manner accurately to length established at the site and work into place without springing or forcing. Replace by one of the proper length any pipe or fitting that allows sufficient space for proper installation of jointing material. Grade the pipeline in straight lines; avoid the formation of dips and low points. Support pipe at proper elevation and grade. Secure firm, uniform support. Wood support blocking will not be permitted. Lay pipe so that the full length of each section of pipe and each fitting will rest solidly on the pipe bedding; excavate recesses to accommodate joints, and couplings. Provide anchors and supports where indicated and where necessary for fastening work into place. Make proper provision for expansion and contraction of pipelines. Keep trenches free of water until joints have been properly made. At the end of each work day, close open ends of pipe temporarily with wood blocks or bulkheads. Do not lay pipe when conditions of trench or weather prevent installation. Depth of cover over top of pipe shall not be less than 2 1/2 feet.

#### 3.1.1.4 Installation of Tracer Wire

Install a continuous length of tracer wire for the full length of each run of nonmetallic pipe. Attach wire to top of pipe in such manner that it will not be displaced during construction operations.

#### 3.1.1.5 Connections to Existing Water Lines

Make connections to existing water lines after approval is obtained and with a minimum interruption of service on the existing line. Make connections to existing lines under pressure in accordance with the recommended procedures of the manufacturer of the pipe being tapped.

Provide tapping sleeves and tapping valves, and all other material, labor, and equipment necessary for the connection. Perform all earthwork and disinfection work at the connection prior to installation of the tapping machine. Perform the disinfection work in the presence of the SSC Potable Water System Operator. All other connections, including wet tapping mains larger than 12 inches in diameter and installation of new pipe fittings in existing mains, shall be performed by the Contractor. Make connections to existing water lines in the presence of the SSC Potable Water System

Operator.

### 3.1.2 Special Requirements for Installation of Water Mains

#### 3.1.2.1 Installation of High Density Polyethylene (HDPE) Plastic Piping

##### a. General Installation:

PE pipes shall be installed in accordance with ASTM D 2774.

##### b. Pipe and Fittings:

Size as indicated on the plans. Install as shown in accordance with manufacturer's recommendations.

##### c. Hauling, Unloading and Distributing Pipe:

During loading, transportation and unloading, every precaution shall be taken to prevent injury to the pipe. No pipe shall be dropped from cars or trucks, or allowed to roll down slides without proper retaining ropes. During transportation each pipe shall rest on suitable pads, strips, skids or blocks securely wedged or tied in place. Any pipe damaged shall be replaced at Contractor's own expense.

##### d. Jointing:

Butt Fusion Procedure (Jointing) shall comply with ASTM F 2620, Procedure 2 Butt Fusion. Sections of HDPE pipe shall be joined into continuous lengths on the jobsite above ground. The joining method shall be the butt fusion method and shall be performed in strict accordance with the pipe manufacturer's recommendations. The butt fusion equipment used in the joining procedures should be capable of meeting all conditions recommended by the pipe manufacturer, including, but not limited to, temperature requirements of 400-450 degrees Fahrenheit, alignment, and an interfacial fusion pressure of 75 PSI. The butt fusion joining will produce a joint with weld strength equal to or greater than the tensile strength of the pipe itself. All welds will be made using a Data Logger to record temperature, fusion pressure, with a graphic representation of the fusion cycle shall be part of the Quality Control records.

Electrofusion joint will be allowed for jointing HDPE nominal pipe diameters of 10 inches and smaller or other applicable locations after a plan and procedure has been submitted and approved by the Contracting Officer.

Mechanical joining will be used where the butt fusion method can not be used. Mechanical joining will be accomplished by using a HDPE Mechanical Joint adapter with a ductile iron back-up ring.

Socket fusion, hot gas fusion, threading, solvents, and epoxies will not be used to join HDPE pipe.

##### e. Offsets:

Maximum offset in alignment between adjacent pipe joints shall be as recommended by the manufacturer and approved by the Contracting

Officers' Technical Representative (COTR), but shall not exceed 5 degrees.

- f. Field Quality Control for HDPE Pipe Installation Fusion Joint Quality.
1. Contractor shall provide and implement a Fusion Joint Procedure for both Butt Fusion and Electrofusion, as applicable. Procedures shall include as a minimum, the following process variables:
  - a. Data Logger data from butt fusion equipment for each production joint made
  - b. The fusion equipment Manufacturer and type
  - c. Method of cutting the pipe
  - d. Method of cleaning the pipe
  - e. Equipment capability securing the pipe
  - f. Equipment capability for facing the pipe ends
  - g. Equipment capability of aligning pipe
  - h. Process for obtaining the initial melt
  - i. Melt temperature and initial contact pressure
  - j. Joint alignment tolerances
  - k. Joining temperature and pressure, including gauge pressure allowance for interfacial pressure, drag and fusion pressure
  - l. Tolerances for the fusion bead profile, height and width and v-groove depth for the size of pipe to be joined
  - m. Holding time for joint cooling
  - n. Bead removal techniques (where applicable)
  - o. Inspection
2. Contractor shall provide qualified and certified fusion equipment operators for both the butt fusion and electrofusion equipment. Submit Fusion Welder's Qualifications for approval. Each certified fusion equipment operator shall perform a Fusion Joint Procedure prior to beginning production joining operations. The Procedure shall consist of the following:
  - a. Prepare a sample joint. Pipes on either side of the joint should be at least 15 times the wall thickness in length
  - b. Visually inspect the sample joint and compare it to a sample of an acceptable joint
  - c. Cut the sample joint lengthwise along the pipe into at least three straps at least 1" or 1.5 wall thickness wide
  - d. Visually inspect the cut surface at the joint and compare to a sample of an acceptable joint. There should be no gaps, voids, misalignment, or unbonded areas
  - e. Bend the straps until the ends of the strap touch
  - f. If flaws are observed in the joint, compare appearance with sample of an acceptable joint. Prepare a new sample joint using correct joining procedure, and repeat the Qualifying Procedure. If the operator cannot produce an acceptable joint, the second time, he will not be allowed to operate the fusion equipment.
  - g. Contractor shall utilize an optical or contact pyrometer, or other approved surface temperature measuring device to monitor the temperature of the heating tool. Temperature indicating crayons or markers shall not be used.
3. Unless otherwise specified, the maximum allowable misalignment in the fusion joint shall be 10 percent of the specified wall

thickness. The maximum out-of-roundness shall be located at no greater than 10 percent of the total circumference of the pipe being joined.

4. Visual inspection shall be performed on each fusion joint. The double bead should be rolled over to the surface, and be uniformly rounded and consistent in size all around the joint. The double bead width should be 2 to 2-1/2 times its height above the surface, and the v-groove depth between the beads should not be more than half the bead height.

#### 3.1.2.2 Installation of Valves and Hydrants

- a. Installation of Valves: Install gate valves, AWWA C515 and UL 262, in accordance with the requirements of AWWA M55 and AWWA C906 for valve-and-fitting installation and with the recommendations of the Appendix ("Installation, Operation, and Maintenance of reduced wall, resilient-seated Gate Valves") to AWWA C515. Make and assemble joints to gate valves and check valves as specified for making and assembling the same type joints between pipe and fittings.
- b. Installation of Hydrants: Install hydrants in accordance with AWWA M55 and AWWA C906 for hydrant installation and as indicated. Make and assemble joints as specified for making and assembling the same type joints between pipe and fittings. Install hydrants with the 4 1/2 inch pumper connections facing the adjacent paved surface. If there are two paved adjacent surfaces, contact the COTR for further instructions.

#### 3.1.3 Disinfection

Submit a Disinfection Plan containing detailed descriptions of materials, methods, and water disposal.

Prior to disinfection, obtain COTR approval of the proposed method for disposal of waste water from disinfection procedures. Disinfect new water piping and existing water piping affected by Contractor's operations in accordance with AWWA C651 and AWWA C655. Fill piping systems with solution containing minimum of 50 parts per million of available chlorine and allow solution to stand for minimum of 24 hours. For approval of tested pipe segment disinfection, obtain at least two consecutive satisfactory bacteriological samples from new water piping, analyze by a State of Mississippi certified laboratory, and submit the results prior to the new water piping being placed into service. Documentation of a satisfactory bacteriological sample result shall include the statement "No Coliform Present". Samples shall be collected a State of Mississippi Certified Potable Water System Operator, the Registered Engineer for the project, or a representative of the Mississippi State Department of Health. Prior to discharge of disinfection water, reduce maximum residual chloride content to less than 10 parts per million by method approved by the COTR. Contractor shall demonstrate effectiveness of de-chlorination by testing the water by method acceptable to the COTR, such as Hach chloride test kit, and achieving 2 or more consecutive residual maximum chloride results less than 10 parts per million. Once adequate de-chlorination is confirmed and approved by the COTR, Contractor shall discharge the disinfection water to a location and rate identified by the Construction Manager by flushing with potable water.

### 3.2 FIELD QUALITY CONTROL

#### 3.2.1 Field Tests and Inspections

Prior to hydrostatic testing, obtain COTR approval of the proposed method for disposal of waste water from hydrostatic testing. The COTR will conduct field inspections and witness field tests specified in this section. The Contractor shall perform field tests, and provide labor, equipment, and incidentals required for testing. The Contractor shall produce evidence, when required, that any item of work has been constructed in accordance with the drawings and specifications. Do not begin testing on any section of a pipeline where concrete thrust blocks have been provided until at least 5 days after placing of the concrete.

#### 3.2.2 Testing Procedure

Test water mains and water service lines in accordance with the applicable specified standard, except for the special testing requirements given in paragraph entitled "Special Testing Requirements." Test HDPE water mains in accordance with the requirements of AWWA M55 and ASTM F 2164 for pressure and leakage tests. The amount of leakage on pipelines made of HDPE water main pipe shall not exceed the amounts given in AWWA M55 and ASTM F 2164, except that at joints made with sleeve-type mechanical couplings, no leakage will be allowed.

#### 3.2.3 Special Testing Requirements

For pressure test, use a hydrostatic pressure 120 psi. Hold this pressure for not less than 2 hours. Prior to the pressure test, fill that portion of the pipeline being tested with water for a soaking period of not less than 24 hours. For leakage test, use a hydrostatic pressure not less than the maximum working pressure of the system. Leakage test may be performed at the same time and at the same test pressure as the pressure test.

### 3.3 PIPE ABANDONMENT AND FILLING

Perform abandonment and filling of existing transite piping in accordance with the approved abandonment plan. Cut the pipe without damaging the pipe in accordance with requirements contained on drawing G-002.

- a. Physically disconnect from the pipeline system. Drain, cap, plug or otherwise effectively seal the open ends of all abandoned facilities. Do not complete abandonment until it has been determined that the volume of liquid contained within the abandoned section poses no potential hazard.
- b. When a main is abandoned, together with the service lines connected to it, the customer's end of such service lines is required to be sealed as stipulated above.
- c. Disconnect abandoned service lines from the active mains as close to the main as practicable.
- d. Close all valves left in the abandoned segment.
- e. Remove all above grade valves, risers, and vault and valve box covers 2 ft below grade. Fill vault and valve box voids with suitable concrete and cover with 1 ft +/- of surplus existing soil excavated for pipe installation.



3.4 CLEANUP

Upon completion of the installation of water lines, and appurtenances, all debris and surplus materials resulting from the work shall be removed.

-- End of Section --

APPENDIX I

SSTD-8070-0119-MISC Rev. A December 2009  
John C. Stennis Space Center  
DIG PERMIT STANDARD  
(FORM SSC-618)



**SSTD-8070-0119-MISC Rev. A  
December 2009**

National Aeronautics and  
Space Administration

**John C. Stennis Space Center**  
Stennis Space Center, MS 39529-6000

## **John C. Stennis Space Center DIG PERMIT STANDARD (FORM SSC-618)**

**Original signed by**

**Randall R. Canady**  
NASA SSC Center Operations Directorate  
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**12/14/09**  
Date

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**12/14/09**  
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Central Engineering Files

**12/15/09**  
Date

Stennis Standard	SSTD-8070-0119-MISC	A
	<i>Number</i>	<i>Rev.</i>
	Effective Date: December 15, 2009	
	Review Date: December 15, 2014	
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Responsible Office: NASA Center Operations Directorate		
<b>SUBJECT: Dig Permit Standard (Form SSC-618)</b>		

## Document History Log

Status/ Change/ Revision	Change Date	Originator/ Phone	Description
Basic	1/16/07	S. Fandal 8-2961	Initial Release – supersedes SSC STD 99-015 Rev. B, with the following changes: New document number and format per SPR 1400.1. Complete edit, reorganization and rewrite, including additions, deletions and modifications to process requirements, procedures and responsibilities for FOSC Facilities Systems Engineer, Project Lead, Construction Manager, and Dig Site Supervisor; utility shut-off; safety zone; notifications of NASA/FOSC/TOC Safety and Communications; submittal of redlines and update of drawings; processing of Dig Permit Form SSC-618 (i.e., extension of expiration date and submittal of the signed/dated permit; handling of original signed copy and final checks/signature); and changes to content/format of Form SSC-618. Added section regarding historical site excavation. Included requirement for FOSC Environmental notification on SSC-618. Added relevant document reference of SSC Historic Preservation Plan. Added requirement in 5.2 regarding actions to follow if historic, prehistoric, or human remains are discovered during excavation. Added section 5.2.2 regarding personnel safety and inspection of excavations/trenches prior to entry.
A	12/15/09	J. Craft 8-3574	Replaced Facilities Systems Department with Engineering Services Department. Replaced Facility Systems Engineer with Utility Locator Specialist. Updated references. Section 5.1.3: changed “mechanical methods” to “non-intrusive methods.” Added section 5.1.3j hand locate known but unidentified utility or obstruction. Section 5.2.2: added exception for new confined space requirement. Added Section 5.2.5. Clarified verbiage in Section 5.4. Updated flow chart and Appendix A. Updated formatting in accordance with SPR 1400.1.

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Responsible Office: NASA Center Operations Directorate		
<b>SUBJECT: Dig Permit Standard (Form SSC-618)</b>		

## 1.0 PURPOSE

This John C. Stennis Space Center (SSC) Standard (SSTD) establishes the requirements and responsibilities for all excavations as defined in Section 5.1.1, specifically as they relate to processing of the Dig Permit (Form SSC-618) which is located on the SSC Electronics Form Index.

## 2.0 APPLICABILITY

This SSTD applies to SSC excavations for renovations, repairs, new construction, exploratory work, or field investigations/studies involving SSC underground utilities and to persons who perform or have responsibility for SSC excavations and utility system configuration control.

## 3.0 REFERENCE AND RELEVANT DOCUMENTS

All references are assumed to be the latest version unless otherwise indicated.

Site-wide Operation and Repair Document (SORD) Drawings:

- 11B00-R000, *Site Plan Oxygen Systems*
- 11C00-R000, *Site Plan Hydrogen Systems*
- 11D00-R000, *Site Plan RP-1 Systems*
- 11F00-R000, *Site Plan Nitrogen Systems*
- 11G00-R000, *Site Plan Helium Systems*
- 11H00-R000, *Site Plan High Pressure Air Systems*
- 11J00-R000, *Site Plan High Pressure Industrial Water Systems*
- 12B00-S000, *Site Plan Electrical Power Distribution Systems*
- 12D00-R000, *Site Plan Natural Gas Lines*
- 12F00-R000, *Site Plan Sewage System*
- 12G00-R000, *Site-wide Potable Water Systems*
- 12H00-R000, *Site Plan High Temperature and Chilled Water Systems*
- 12M00-R000, *Site-wide Telecommunications Systems*
- 29 CFR 1926 Subpart M, *Fall Protection*
- 29 CFR 1926 Subpart P, *Excavations*
- Form SSC-151A, *Engineering Modification Instruction Package Index*
- Form SSC-618, *Dig Permit*
- Form SSC-625, *Certificate of Completion*
- Form SSC-704, *Stennis Work Request*
- SPR 8500.2, *Environmental Operations & Implementation Program Procedural Requirements*
- SPR 8715.1, *Safety and Health Program Requirements*
- SSTD-8070-0001-CONFIG, *Facility Engineering Documentation Standard*
- SSTD-8070-0005-CONFIG, *Preparation, Review, Approval, and Release of SSC Standards*
- SSTD-8070-0009-CONFIG, *Preparation of Form SSC-625, Certificate of Completion (COC)*
- SSTD-8070-0124-IDCODES, *Identification of Piping Systems and Above-Ground Markers*
- SCWI-8500-0028-ENV, *Historic Preservation Plan*
- SSP-8715-0001, *SSC Safety and Health Handbook*

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#### 4.0 RESPONSIBILITIES

- a. The NASA SSC Center Operations Directorate, Design and Construction Project Management Division (PMD) and Operations and Maintenance Division (OMD) are responsible for approval of the content of this SSTD and have final authority for its interpretation.
- b. The Facility Operating Services Contractor (FOSC) Engineering Services Department (ESD) is responsible for control of the SSC excavation and permit processes.
- c. NASA and contractor personnel have various responsibilities for planning, approval, supervising, monitoring, notifying, and documenting, as specified throughout this SSTD.
- d. NASA and contractor organizations are responsible for the use and maintenance of this SSTD in accordance with SSTD-8070-0005-CONFIG.

#### 5.0 REQUIREMENTS AND PROCEDURES

##### 5.1 PERMIT PLANNING AND APPROVAL

The Dig Permit (Form SSC-618) is a three-part form which authorizes excavation at locations specified in the documents referenced on the permit. However, it does not guarantee that all subsurface utilities have been identified and marked and are in fact located where or to the depths indicated on the configuration documentation. Information is as complete and up-to-date as possible based on research and investigation of the best information available to identify and locate underground utilities at excavation sites. Details for initiation, approval, and processing of a Dig Permit are specified in the following subsections and the flow chart in Section 8.0. For damage or interruption of utilities during an excavation, and for unscheduled or emergency excavations, refer to Sections 5.3 and 5.4, respectively.

##### 5.1.1 Criteria

An approved Dig Permit (Form SSC-618) is required before work begins for:

- a. Excavations (digging, trenching, drilling) that exceed 30.5 centimeters (cm) (12 inches) below grade (ground surface) of any SSC Fee Area or Buffer Zone Area.
- b. All excavations, regardless of depth, in historic areas. The Historical Preservation Officer must be contacted if dig is in an historic area. (Reference the Historic Site Impact Map.)

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- c. Removal of, or cutting through, any existing roadway or parking lot surfaces (e.g., concrete, asphalt) or any concrete floors, pads, footings or other concrete structures, whether indoors or outdoors.
- d. Exploratory excavations.
- e. Any penetration of grade that exceeds 30.5 cm (12 inches).

### 5.1.2 Initiation/Request

- a. When a SSC project requires excavating, the appropriate Dig Permit requestor (as described in this paragraph and 5.1.2.b) shall notify FOOSC ESD by submitting a SSC Work Request (SWR, Form SSC-704) and a sketch, with an Engineering Modification Instruction (EMI) Index Sheet (Form SSC-151A), showing a 3-meter (10-foot) right-of-way (1.5 meters [5 feet] on each side of centerline) along the route of the proposed excavation.
- b. For projects in design, the Design Engineer shall notify FOOSC ESD by providing an SWR and an EMI with sketch as soon as the requirement for excavation has been identified and no later than the 90% design review meeting.
- c. For all projects that require excavation work, FOOSC ESD shall be invited to all design reviews and other meetings affecting the project design.
- d. For projects to be implemented, the Construction Manager or Dig Site Supervisor shall verify all applicable permits are in place and contact FOOSC ESD by providing an SWR and an EMI (Form SSC-151A) with sketch no later than five (5) working days prior to the planned start of the excavation.
- e. For circumstances that are unscheduled and/or emergencies, FOOSC ESD will expedite approval/issue of the Dig Permit to avoid project delays. Refer to Section 5.4.

### 5.1.3 Research and Investigation

- a. Upon receipt of proper notification for a Dig Permit per Section 5.1.2, FOOSC ESD shall conduct the required research to determine if underground utilities are present along the proposed excavation route and if historically significant areas are involved.
- b. All known information sources shall be used; e.g., Facilities Master Plan, systems site plans, site drawings, applicable building drawings (for excavations within 1.5 m [5 ft] of a building), SORD drawings, unincorporated Engineering Orders (Form SSC-151D), the SSC Historic Preservation Plan and cognizant personnel.



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- c. Cognizant personnel shall be consulted for knowledge gained from past SSC excavations.
- d. FOSC ESD will normally complete the research/approval of a Dig Permit and issue it within five (5) workdays after receipt of the request.
- e. Ground-penetrating radar shall be used every time to determine the actual locations of underground utilities and obstructions in and around the excavation site. When appropriate, metal detection devices and other non-intrusive methods can be used to establish a safe working distance from the excavation site.
- f. When practicable, a walk-down of the excavation route shall be done.
- g. If needed, exploratory excavations and hazardous atmosphere testing shall be performed.

**WARNING/CAUTION**

**If excavation will exceed depth of 1.2 m (4 ft) and require entry by personnel or if a hazardous atmosphere is possible, FOSC Safety must be notified at least two (2) work days before work starts. If the excavation involves voice/data utilities, Outsourcing Desktop Initiative for NASA (ODIN) must be notified at least three (3) workdays before work begins. If an SSC historic area is involved, the NASA SSC Environmental Management Office must be notified at least two (2) workdays before work begins. If applicable, as specified in NASA/Contractor guidelines and procedures, those who are notified of an excavation shall notify other necessary personnel or groups**

- h. SSC contains areas of historical and cultural interest that are protected by the SSC Historical Preservation Plan on file in the NASA SSC Environmental Management Office. Before any excavation in these areas begins, FOSC ESD or the project construction manager (for an outside agency) must notify the SSC Environmental Officer and Historical Preservation Officer, who will advise FOSC ESD of special considerations or conditions that must be met. FOSC ESD will communicate this information to the project lead, Construction Manager and/or Dig Site Supervisor, as applicable. If the Historical Preservation Officer is not available, the SSC Environmental Officer will act as alternate.
- i. During the research and investigation process, FOSC ESD shall consult as appropriate with the project lead, Construction Manager, Shop Supervisor, Dig Site Supervisor, appropriate engineers, SSC Historic Preservation Officer, FOSC Safety, ODIN, and NASA SSC Environmental.
- j. After the research and investigation process is completed and the exact location of a known underground utility or obstruction has not been determined, the contractor or shop

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performing the underground work activities shall hand locate the unidentified utility or obstruction prior to any other excavation. The construction manager and underground utility locator shall be an integral part of the hand locating process.

- k. After the research and investigation are completed and prior to permit approval, the Construction Manager or Dig Site Supervisor shall meet with the appropriate Facility Manager whose facility's operations may be affected by the planned excavation activities, to review the permit and provide information relative to excavation impact on operations and/or personnel.

#### 5.1.4 Expiration Date Determination

- a. FOSC ESD shall consult with the following, as applicable, to determine an expiration date that will allow sufficient time for completion of the excavation under reasonable conditions: project lead, Construction Manager, Dig Site Supervisor, FOSC Safety and ODIN.
- b. The expiration date must be agreed upon by all consulting parties and entered on the Dig Permit Form, SSC-618, before approval signatures are obtained. The maximum duration allowed for a Dig Permit shall not exceed 30 calendar days. For high utility areas, the expiration shall not exceed 14 calendar days.
- c. If an expiration date needs to be extended, FOSC ESD must be notified as soon as practical before the permit expiration date. When applicable, the requestor must also notify the SSC Environmental Officer, FOSC Safety, and ODIN and convey all information relevant to the extension.

#### 5.1.5 Approval and Issuance

- a. FOSC ESD shall be the final approval authority and sole issuer for all SSC Dig Permits, which become valid only after all required signatures have been obtained. (See Appendix B)
- b. After compiling the Dig Permit utilities information, conducting appropriate consultations, and determining expiration date per Sections 5.1.3 and 5.1.4, the Construction Manager or Dig Site Supervisor shall obtain all required approval signatures. At a minimum, the FOSC Utility Locator Specialist, Dig Site Supervisor, and equipment operator performing the excavation work must sign all Dig Permits. Other signatures may be required as follows: the SSC contractor Construction Manager must sign for excavations performed by offsite contractors and FOSC contract construction jobs; FOSC Safety Department must sign in all cases when the excavation depth exceeds 1.2 m (4 ft) below grade and is entered by personnel, or a hazardous atmosphere might exist; and ODIN must sign in all cases when the excavation involves data or voice communication lines.

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- c. The SSC Environmental Officer or delegate shall sign the permit if the excavation will be in an identified historical area.
- d. After final approval of the Dig Permit, the FOSC Utility Locator Specialist shall keep the white page (top copy) of the original, signed permit until final signoff at job completion per Section 5.2.3.
- e. The FOSC Utility Locator Specialist shall provide the yellow page of the three-part form to the equipment operator and provide additional copies of the signed permit, as applicable, to the Project Lead, the SSC Environmental Officer, ODIN, and/or FOSC Safety, who retain their copy for the duration of the excavation.
- f. The SSC contractor Construction Manager or Dig Site Supervisor shall ensure that the pink page of the approved (signed) permit (with the area drawing/sketch) is posted in a conspicuous location at the dig site throughout the duration of the excavation. The copy of the permit posted at the site should be guarded in a manner to prevent damage from weather conditions.
- g. The SSC contractor Construction Manager or Dig Site Supervisor shall complete and submit the original signed permit, with excavation documentation redlines, as specified in Section 5.2.3.
- h. Approved Dig Permits are valid from the date of the last approval signature through the expiration date, as established in Section 5.1.4. Extension of the expiration date shall not be requested nor granted after the expiration date shown on the permit. Once a Dig Permit expires, the excavation must cease until a new permit is initiated and approved.

## 5.2 EXCAVATION

- a. After the Dig Permit is completed (including expiration date), approved (signed), and distributed, the excavation will proceed in three phases: site preparation/utility identification, actual excavation activities, and post-excavation documentation.
- b. Prior to the start of any excavation, FOSC ESD shall ensure that notifications per Section 5.1.3 have been completed and that work crew personnel and their supervisor/monitor are informed and advised, especially with regard to procedures in this Standard.

### 5.2.1 Site Preparation/Utility Identification

- a. Prior to start of any excavation, FOSC ESD shall clearly mark the locations of underground utilities in the excavation area and along the excavation route (as identified on the Dig

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Permit). The nearest shut off points for all potentially affected utilities will also be marked on the dig permit sketch.

- b. Location markers may be paint lines, wood stakes or wire pin flagging; however, in no case shall only wood stakes or only paint be used (because of susceptibility to damage from mowing). It is preferred that the wire pin flagging method be used, supplemented by paint and wood stake markers.
- c. When a stake is used, the utility shall be clearly identified on the stake.
- d. When a paint line is used, the utility shall be clearly identified alongside the location line.
- e. Paint and stake markings shall be on the ground as close as possible to the actual location of the marked underground utility.
- f. Wire flags shall be placed directly above the utility.
- g. The contractor or subcontractor responsible for roads and grounds maintenance shall train all roads and grounds maintenance personnel and ensure they do not damage, remove, or disturb excavation markers.

### 5.2.2 Personnel Safety Requirements

- a. Prior to an excavation near gas lines, a safety representative shall conduct a sniff test to ensure the safety of workers as per SSP-8715-0001 SSC Safety and Health Handbook.
- b. Prior to employees entering all excavations/trenches, the adjacent areas and protective systems shall be inspected by a competent person appointed by the contractor performing the excavation.
- c. Excavation competent persons shall have documented training in excavation soil classification, shoring, sloping/benching, and fall protection requirements.
- d. Employees entering an excavation/trench shall be protected from cave-ins by an adequate protection system designed in accordance with 29 CFR 1926 Subpart P, "Excavations." The only exceptions to this requirement at SSC are:
  - 1. Excavations made entirely in stable rock.
  - 2. Excavations less than 1.2 m (4 ft) in depth and examination of the ground by a competent person provide no indication of potential cave-ins.
  - 3. New confined space requirement.

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- e. The competent person shall inspect all excavations daily, prior to the start of the work shift and as needed throughout the work shift.
- f. Inspections shall be made following every rainstorm or other hazard increasing occurrences.
- g. All competent person excavation inspections shall be documented by a signed checklist.
- h. Checklists shall be maintained at the worksite and made available to SSC construction managers and/or safety personnel upon request.

### 5.2.3 Actual Excavation

#### WARNING

**The Dig Site Supervisor shall ensure that a safety zone is clearly marked at least 1.8 m (6 ft) on all sides of the excavation area per 29 CFR 1926 Subpart M, "Fall Protection."**

#### CAUTION

**Excavations in areas of known or suspected subsurface utilities shall be closely monitored by the Construction Manager or Dig Site Supervisor, especially when accuracy of sketches and drawings or other configuration documentation is in doubt. Known or questionable interferences shall be "Hand-Dug" within 1.8 m (6 ft) of the interference. When excavating to within 1.5 m (5 ft) of a building, the applicable building drawings, in addition to the SORD drawings, shall be reviewed. In cases when issuance of a Dig Permit was expedited, the level of supervision shall be increased and the Construction Manager/Dig Site Supervisor shall exercise caution, taking into account the added potential for damage to or disruption of utilities. In the event of utility damage or service disruption, Section 5.3 applies.**

- a. For any project modification that requires an excavation to deviate from the original route approved on the Dig Permit:
  - 1. The excavation activities shall cease.
  - 2. FOSC ESD shall be immediately advised and provided with all appropriate information to enable research and investigation for a new Dig Permit.
  - 3. The new Dig Permit shall be required before the excavation may continue.

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- b. If the excavation involves voice/data utilities, ODIN must be notified before start of the excavation. If applicable, ODIN shall notify NASA and/or other SSC entities in accordance with internal procedures and/or NASA guidelines.
- c. After site/utility identification markings are completed per Section 5.2.1, the FOSC Utility Locator Specialist shall provide (verbally or in writing) to the Construction Manager or Dig Site Supervisor) and, when applicable, the project lead, FOSC Safety and ODIN, all known information concerning existing utilities within the excavation area and along the excavation routes.
- d. Information shall include pipe sizes, line pressures, hazards, communications and power distributions, and consequences that could result should utilities be damaged or disrupted.
- e. The Construction Manager or Dig Site Supervisor shall ensure that the Dig Permit and site sketch are available at the excavation site at all times during the excavation.
- f. During the excavation process, the Construction Manager or Dig Site Supervisor shall prepare and maintain utilities configuration documentation redlines in accordance with SSTD-8070-0001-CONFIG for:
  - 1. Any changes to the configuration of new or existing utilities.
  - 2. Any utilities or obstructions not previously identified on configuration documentation.
  - 3. Utilities found in locations other than as indicated on the configuration documentation.
- g. During the excavation, should there be a find of historic, prehistoric, or human remains, the digging shall be immediately stopped and the SSC Historic Preservation Officer and/or delegate shall be contacted; if necessary the resident archaeologist, or other expert personnel will be asked to assess the situation and recommend mitigation strategies.
- h. All repaired, modified, or new underground utilities shall have detectable, metallic tape and be identified with temporary above-ground markers in accordance with requirements of Section 5.2.1.
- i. For piping, the requirements of SSTD-8070-0124-IDCODES shall also apply.

#### **5.2.4 Post-Excavation Documentation**

- a. Upon completion of the excavation, the Construction Manager or Dig Site Supervisor shall complete, sign and date the bottom portion of the Dig Permit Form SSC-618 and ensure that applicable redlines and sketches of the subsurface utilities encountered and their exact locations have been completed in accordance with SSTD-8070-0001-CONFIG.

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- b. The Construction Manager or Dig Site Supervisor shall notify the ULL two (2) days prior to backfilling so locations and elevations of new and existing utilities shall be verified and recorded to show orientation and elevation as they existed immediately prior to backfilling of the excavation.
- c. Within three work days after excavation backfilling, the Construction Manager or Dig Site Supervisor shall ensure that the original signed Dig Permit Form SSC-618 and the excavation documentation, including sketches and redlines, are incorporated into the project folder and provided to the appropriate configuration/cost control or planning/scheduling function, as applicable, for inclusion with the Certificate of Completion (COC Form SSC-625) per SSTD-8070-0009-CONFIG, and processing to Central Engineering Files (CEF).
- d. CEF shall initiate update of appropriate plans and drawings per SSTD-8070-0001-CONFIG.
- e. All closed or completed dig permits shall be archived in CEF.

### 5.2.5 Accountability

- a. The job shall not be closed out until all open Dig Permits are closed and documentation is submitted.
- b. Contractors and subcontractors shall have final payments withheld until Dig Permits are closed out.

### 5.3 UTILITY DAMAGE OR DISRUPTION

#### CAUTION

**If damage occurs to a utility line, the utility shall be shut off at the nearest control point and notifications as identified below shall be completed.**

The FOSC Utility Locator Specialist shall fully educate all personnel involved in excavation activities to ensure that the following notifications, as applicable, are made in the event a utility line is damaged or service disrupted. Additional notifications are required for unscheduled or emergency digging per Section 5.4.

- 911 or 228-688-3636 (if using a cellular telephone) – in all cases involving release of oil or hazardous materials or gases, or if possible injury/harm to personnel
- SSC Fire Department – if there is a threat of cave-in
- FOSC Safety Office – in all cases of utility damage or disruption (\*)
- ODIN – if data or voice communication lines are involved (\*)
- FOSC Mechanical Plumbing Shop – if fluid transmission lines are involved

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- FOSC Electric Shop – if electrical conduit or wiring is involved
  - NASA SSC Propulsion Test Operations and High Pressure Gas Facility – if high pressure hydrogen, nitrogen, oxygen, air, or helium transfer lines are involved
  - NASA SSC Propulsion Test Operations and Test Stand/facility supervisor – if involved utility is located in the SSC Test Complex
  - NASA SSC Environmental – if an SSC historic area is involved
- (\* ) Notify NASA and/or other entities per applicable NASA SSC and/or contractor guidelines and procedures.

#### 5.4 UNSCHEDULED AND EMERGENCY DIGGING

- a. For unscheduled and emergency excavations (defined in Section 7.0) all provisions of this Standard must be performed as soon as practical before, during or immediately after completion of excavation backfilling, except for the requirements in Section 5.2.2 and notifications in Section 5.3, which are always required before excavation begins.
- b. If digging is required during non-working hours (e.g., for after-hours repairs of damaged or interrupted utilities), the Construction Manager or Dig Site Supervisor shall contact the Energy Management Control System (EMCS) Operation Control Center (Ext. 8-3381).
- c. EMCS shall notify FOSC ESD and, as applicable, the SSC Environmental Officer, FOSC Safety and/or ODIN.
- d. If applicable, contractor Safety and Communications shall notify NASA and/or other SSC entities as specified in contractor internal written procedures and/or in NASA guidelines.

#### 6.0 RECORDS AND FORMS

Records and forms required by the procedures of this standard shall be maintained in accordance with SPR 1440.1. All records and forms are assumed to be the latest edition unless otherwise indicated. Forms may be obtained from the SSC Electronic Forms repository or from the NASA SSC Forms Management Officer. Quality Records are identified in the SSC Master Records Index.

#### 7.0 DEFINITIONS (as referenced in this document)

Construction Manager: SSC contractor technician or engineer responsible for supporting the Project Lead with monitoring and coordination of daily operations for an SSC project.

Designee: Someone authorized by a responsible party in accordance with appropriate internal procedures to perform work or duties for, or on behalf of, the responsible party.



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Design Engineer: Engineer or lead person who designs or plans a project.

Dig Site Supervisor: The person designated by the project lead who is responsible for conduct or supervision of an SSC project or excavation - usually the SSC Shop supervisor/foreman/lead or offsite contractor designated lead.

Emergency Excavation: Digging, trenching or drilling below 30.5 cm (12 inches) that must be done immediately, without a Dig Permit, to prevent or minimize personal injury, damage to facilities, systems or equipment, or interruption of a utility service.

Excavation: Digging, trenching or drilling that cuts through, removes or penetrates more than 30.5 cm (12 inches) below the surface of any SSC grounds, roads or other structures as specified in Section 5.1.1.

Facilities Systems Engineer: Controls SSC excavation and permit process.

Fluid: Any liquid or gas (e.g., air, water, natural gas, oxygen, hydrogen, nitrogen, helium, RP-1).

Grade: Surface of the ground.

ODIN: Outsourcing Desktop Initiative for NASA – Contractor for utility and data lines (e.g., telephone and computer network communication lines).

Project: Design, construction and/or excavation for new or modified SSC facilities or for purposes of research or planning. An excavation may be part of or the whole of a project.

Project Lead: SSC NASA or contractor technician or engineer who is responsible for supervision and completion of a given SSC project. (This person may be the NASA project manager or project engineer, for NASA direct projects, or the contractor shop supervisor/foreman/lead or contractor superintendent.)

Project Manager: NASA engineer responsible for acceptance of an SSC project.

Shop Supervisor/Lead/Foreman: FOSC or Test Operations Complex shop technician or shop engineer who is responsible for supervising and completing an SSC project.

Technician: A person who is certified or qualified in a technical skill or trade.

Test Liaison: FOSC Test Complex Services Department technician or engineer responsible for monitoring an SSC project.

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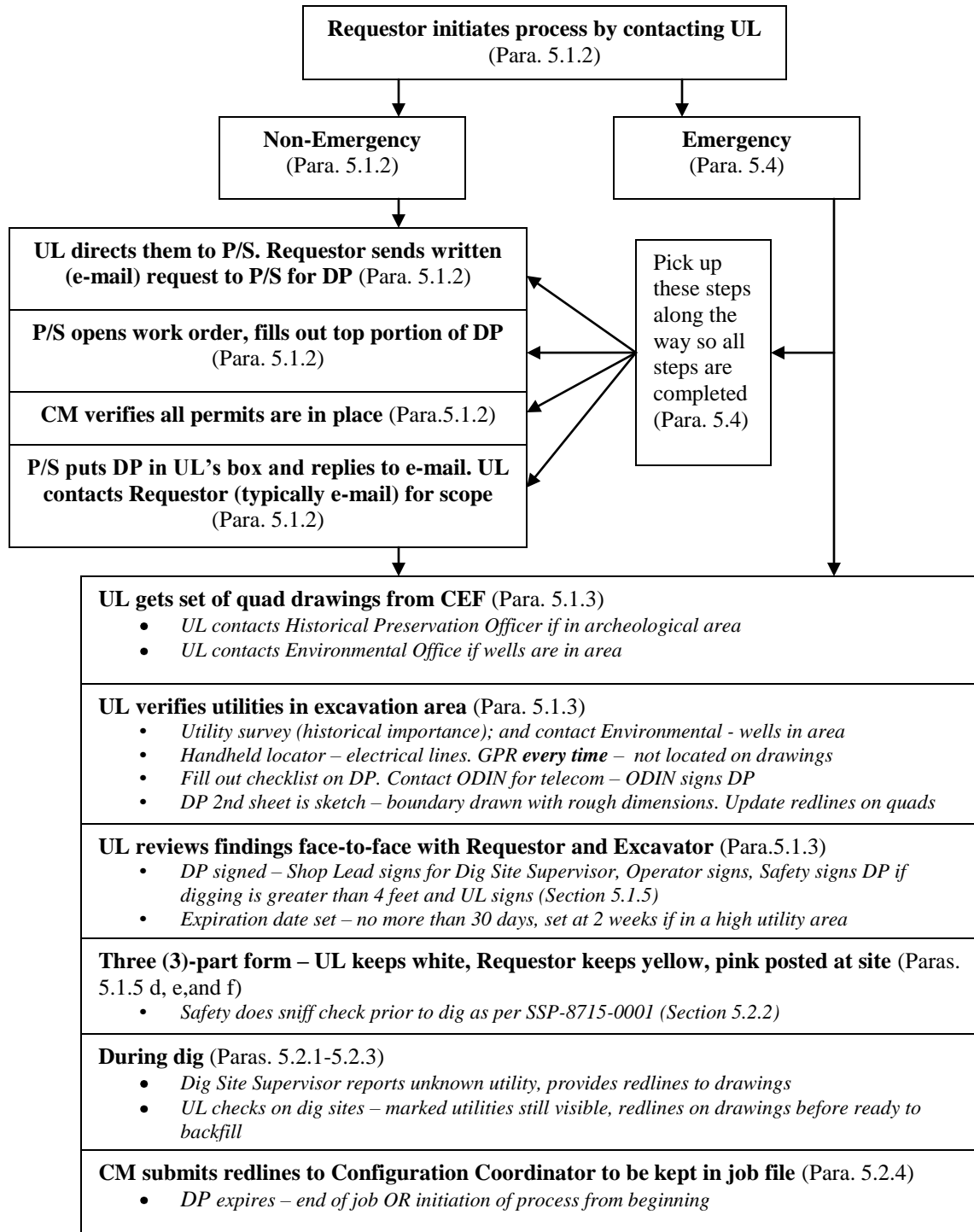
Unscheduled Excavation: Digging below 30.5 cm (12 inches) that must be performed as soon as possible to prevent or minimize costly loss of fluid/product (e.g., water, oxygen, data), uncomfortable working environment(s), or inconvenience to normal working operations.

Utility: Any underground system or component thereof (e.g., piping, electrical conduit, cabling) that carries or conveys air, fluids, electricity or voice/data signals.

Work Day: Monday through Friday, not including holidays.

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## 8.0 DIG PERMIT PROCESS FLOW CHART



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## APPENDIX A. ACRONYMS AND ABBREVIATIONS

CEF	Central Engineering Files
CFR	Code of Federal Regulations
cm	centimeter
COC	Certificate of Completion (Form SSC-625)
EMCS	Energy Monitoring and Control System
EMI	Engineering Modification Instruction (Form SSC-151)
ESD	Engineering Services Department (FOSC)
FOSC	Facility Operating Services Contractor
ft	feet/foot
m	meter(s)
NASA	National Aeronautics and Space Administration
ODIN	Outsourcing Desktop Initiative for NASA
OMD	Operations and Maintenance Division (NASA Center Operations Directorate)
PMD	Design and Construction Project Management Division (NASA Center Operations Directorate)
SCWI	Stennis Common Work Instruction
SORD	Site-wide Operation and Repair Document
SPR	John C. Stennis Space Center Procedural Requirements
SSC	John C. Stennis Space Center
SSTD	John C. Stennis Standard
SWR	Stennis Work Request (Form SSC-704)

Stennis Standard	SSTD-8070-0119-MISC	A
	<i>Number</i>	<i>Rev.</i>
	Effective Date: December 15, 2009	
	Review Date: December 15, 2014	
Responsible Office: NASA Center Operations Directorate		
<b>SUBJECT: Dig Permit Standard (Form SSC-618)</b>		

**APPENDIX B. DIG PERMIT SIGNATURE REQUIREMENTS**

**FOR REFERENCE ONLY**


<b>SIGNEE</b>	<b>FOSC Construction Task</b>	<b>FOSC Shop Task</b>	<b>NASA Direct Task</b>	<b>Approval</b>	<b>Job Complete</b>
FOSC Utility Locator Specialist	X	X	X	X	
Project Lead					
Construction Manager	X		X	X	X <sup>(3)</sup>
Dig Site Supervisor		X			X <sup>(3)</sup>
Equipment Operator	X	X	X	X	
FOSC Safety	X <sup>(1)</sup>	X <sup>(1)</sup>	X <sup>(1)</sup>	X	
ODIN	X <sup>(2)</sup>	X <sup>(2)</sup>	X <sup>(2)</sup>	X	
SSC Environmental Officer <i>(if excavation involves a historic area)</i>	X	X	X	X	

**NOTE:** All signees sign original Dig Permit provided by the Construction Manager or Dig Site Supervisor.

- (1) If excavation exceeds 1.2 m (4 ft) and will be entered by personnel, or if hazardous atmosphere is possible or if SSC historic area is involved
- (2) If voice/data lines are involved
- (3) Construction Manager or Dig Site Supervisor signs for all permits upon job completion.

Stennis Standard	SSTD-8070-0119-MISC	A
	Number	Rev.
	Effective Date: December 15, 2009	
	Review Date: December 15, 2014	
Page 20 of 20		
Responsible Office: NASA Center Operations Directorate		
<b>SUBJECT: Dig Permit Standard (Form SSC-618)</b>		

**APPENDIX C. EXAMPLE OF DIG PERMIT – FOR REFERENCE ONLY**

 NATIONAL AERONAUTICS AND SPACE ADMINISTRATION Johnson Space Center 2800 Space Center Drive, MS 4629-0001		<b>DIG PERMIT</b> (Implemented by SSTD-8070-0119-MISC)	
WORK TO BE DONE AT (LOCATION) _____		PER SWR NUMBER _____	
Will involve excavation, digging, trenching, or drilling in accordance with the attached copy of the authorizing document (e.g., SWR or Work Order) and attached copy of approved engineering sketch/drawing.			
REQUESTOR _____	DATE OF REQUEST _____		
PHONE: _____	DATE OF SCHEDULED START OF EXCAVATION _____		
ORGANIZATION _____	DATE OF EXCAVATION PERMIT EXPIRATION _____		
<b>INSTRUCTIONS</b>			
A dig permit must be approved before starting any work that requires digging, trenching, or drilling as specified in SSTD-8070-0119-MISC. This form is used to identify only the known existing utilities or obstructions that may be encountered during excavation; there may be other obstructions present but not identified. Known utilities or obstructions will be communicated to the excavation equipment operator(s) before any work starts. Approximate locations of utilities or obstructions will be identified and marked by the Facilities Operating Services (FOS) Contractor Maintenance Engineering before work begins.			
<input type="checkbox"/> No known utilities at excavation site; staking and/or marking are not required.			
<input type="checkbox"/> Utilities at excavation site as noted below, and the area is staked or marked.			
<input type="checkbox"/> ODIH was notified 3 working days before start of work and was notified long-distance carriers to mark their lines.			
<input type="checkbox"/> FOS Safety was notified at least 2 work days before start of work.			
<input type="checkbox"/> NASA SSC Environmental Management was notified at least 2 work days before start of work.			
UTILITIES PRESENT IN THE AREA	REMARKS	UTILITIES PRESENT IN THE AREA	REMARKS
POTABLE WATER		HYDROGEN	
FIRELINE		W-1 FUEL	
SEWAGE SYSTEM		NATURAL GAS	
ELECTRICAL		HELIUM	
TELECOMMUNICATIONS		HIGH PRESSURE AIR	
COOLING UTILITY CONTROL SYSTEM		HIGH TEMPERATURE WATER	
CHILLED WATER		HIGH-PRESS. INDUSTRIAL WATER	
OXYGEN		OTHER	
HYDROGEN		OTHER	
DIG PERMIT IS VALID ONLY WHEN ALL REQUIRED SIGNATURES AND DATES ARE PRESENT AND THE PERMIT IS PROPERLY SIGNED AND DATED.			
Dig Site Supervisor	Date	Dig Site Supervisor (if different org.)	Date
Equipment Operator	Date	Equipment Operator (if different org.)	Date
Facility Systems Engineer	Date	Facility Systems Engineer (if different org.)	Date
SSC Environmental Officer	Date	SSC Environmental Officer (if different org.)	Date
UPON COMPLETION OF EXCAVATION, THE APPLICABLE PERSON SHALL MARK AND SIGN BELOW, AND FORWARD WITH REDLINES TO APPROPRIATE CONFIGURATION CONTROL OR PLANNING/SCHEDULING FUNCTION.			
ANY UNIDENTIFIED SYSTEMS OR OBSTRUCTIONS FOUND?		NO <input type="checkbox"/> YES <input type="checkbox"/> IF YES, attach sketch	
ANY CHANGES MADE TO THE CONFIGURATION OF NEW OR EXISTING SYSTEMS?		NO <input type="checkbox"/> YES <input type="checkbox"/> IF YES, attach sketch	
ANY SYSTEMS FOUND IN LOCATIONS OTHER THAN AS INDICATED ON CONFIGURATION DOCUMENTATION?		NO <input type="checkbox"/> YES <input type="checkbox"/> IF YES, attach sketch	
Completion Worker	Date	Dig Site Supervisor (if different org.)	Date
SSC 618 (September 2008) Issued 4-1			

National Aeronautics and  
Space Administration  
John C. Stennis Space Center  
Stennis Space Center, MS 39529-6000



August 3, 2012

Reply to Attn of: **Office of Procurement**

Sauer Incorporated  
11223 Phillips Pkwy, Drive East  
Jacksonville, FL 32256-1574

Subject: Contract NNS12AA83B, Multiple Award Construction Contract (MACC), Task Order NNS12AA95T on Stennis Space Center

Forwarded herewith for your files is one (1) executed copy of the subject task order for the project entitled, "Potable Water System Upgrades". In accordance with FAR Clause 52.228-15, Performance and Payment Bonds— Construction, you are hereby requested to provide this office with performance and payment bonds in the amount of \$4,973,400.00 along with proof of insurance within ten (10) days. Your safety and health plan is required to be approved prior to issuing the Notice to Proceed.

Please acknowledge receipt of this document by executing the "Acknowledgement of Receipt" block below and returning a copy to this office. If you have any questions, you may contact me at 228-688-2346.

  
Jason Edge  
Contracting Officer

Enclosure A/S



RECEIPT

# ORDER FOR SUPPLIES OR SERVICES

PAGE OF PAGES  
1 9

IMPORTANT: Mark all packages and papers with contract and/or order numbers.

1. DATE OF ORDER 8/3/12		2. CONTRACT NO. (If any) NNS12AA83B		6. SHIP TO:	
3. ORDER NO. NNS12AA95T		4. REQUISITION/REF NO. 4200426790		a. NAME OF COSIGNEE	
5. ISSUING OFFICE (Address correspondence to) Office of Procurement/ DA00 John C. Stennis Space Center, MS 39529-6000				b. STREET ADDRESS	
7. TO:		c. CITY	d. STATE	e. ZIP CODE	
a. NAME OF CONTRACTOR Sauer Incorporated		f. SHIP VIA			
b. COMPANY NAME		8. TYPE OF ORDER:			
c. STREET ADDRESS 11223 Phillips PKWY, Drive East		<input type="checkbox"/> a. PURCHASE		<input checked="" type="checkbox"/> b. DELIVERY - Except for billing instructions on the reverse, this delivery order is subject to instructions contained on this side only of this form and is issued subject to the terms and conditions of the above-numbered contract.	
d. CITY Jacksonville		e. STATE FL		REFERENCE YOUR: Please furnish the following on the terms and conditions specified on both side of this order and on the attached sheet, if any, including delivery as indicated.	
f. ZIP CODE 32256-1574					
9. ACCOUNTING AND APPROPRIATION DATA 64RA10 6100.3200 64 CECX 62012D 769Z			10. REQUISITIONING OFFICE Office of Procurement/ DA00		
11. BUSINESS CLASSIFICATION: (Check appropriate boxes)					12. F.O.B. POINT
<input type="checkbox"/> a. SMALL	<input checked="" type="checkbox"/> b. OTHER THAN SMALL	<input type="checkbox"/> c. DISADVANTAGED	<input type="checkbox"/> 9. SERVICE-DISABLED VETERAN OWNED		
<input type="checkbox"/> d. WOMEN-OWNED	<input type="checkbox"/> e. HUBZone	<input type="checkbox"/> f. EMERGING SMALL BUSINESS			
13. PLACE OF		14. GOVERNMENT B/L NO.	15. DELIVER TO F.O.B. POINT ON OR BEFORE (Date)	16. DISCOUNT TERMS	
a. INSPECTION SSC	b. ACCEPTANCE SSC	N/A	545 calendar days from NTP	Net 14	

### 17. SCHEDULE (See page 2 for Rejections)

ITEM NO. a.	SUPPLIES OR SERVICES b.	QUANTITY ORDERED c.	UNIT d.	UNIT PRICE e.	AMOUNT f.	QUANTITY ACCEPTED g.
1	In accordance with the above contract, contractor shall provide Bid Item 0002, 0003, 0004 and 0005 of the basic contract entitled Potable Water System Upgrades in accordance with the specifications and Drawings in section J. Work shall be completed within 545 calendar days after receipt of the Notice to Proceed.	1	JB	\$4,948,400.00	\$4,948,400.00	
2	Potential Monetary award for Safety conscious performance (See para H5 of contract NNS12AA83B)	1	JB	\$25,000.00	\$25,000.00	

18. SHIPPING POINT		19. GROSS SHIPPING WEIGHT		20. INVOICE NO.		17h. TOTAL (Cont. pages)
21. MAIL INVOICE TO:						
SEE BILLING INSTRUCTIONS ON PAGE 2	a. NAME NSSC Shared Services Center Financial Management Division FMD					17i. GRAND TOTAL
	b. STREET ADDRESS (or P.O. Box) BLDG 1111, C Road Ref: NNS09AA T					
	c. CITY John C. Stennis Space Center		d. STATE MS	e. ZIP CODE 39529-6000		
22. UNITED STATES OF AMERICA BY (Signature)				23. NAME OF CONTRACTING/ORDERING OFFICER Jason Edge		







## PART I - THE SCHEDULE

## SECTION B - SUPPLIES OR SERVICES AND PRICE/COSTS

**B.1 SUPPLIES AND/OR SERVICES TO BE PROVIDED**

The Contractor shall provide all resources (except as may be expressly stated in the contract as furnished by the Government) necessary to deliver and perform the work in accordance with the Description/Specifications/Statement of Work provided with each task order; the contract terms and conditions, drawings, and special conditions provided with the task orders, when applicable. All work shall be initiated through task orders issued in accordance with H.8 TASK ORDER PROCEDURES and Contract Clause I.3 FAR 52.216-18 entitled Ordering.

**B.2 BID SCHEDULE****Bid Item 0002:**

**Construction: Base Bid Task Order #1,** The seed project entitled, Potable Water System Upgrades shall consist of providing all labor, tools, equipment, and materials to install replacement potable water main transmission pipe, connections to service branches, associated accoutrements, and complete associated tasks in accordance with the specifications and drawings identified in Section J and wage determination Heavy MS120062 Mod #0 at Stennis Space Center, Mississippi.

(b)(4)

**Bid Item 0003:**

**Additive Bid Item 1: Task Order #1,** Consist of all work necessary to construct pipe installation from station 700+00 to 718+50, 350+00 370+93, and 800+00 to 803+44. Couplings to existing main and service pipe shall be required at multiple locations. All work shall be in accordance with the drawings and specifications for this project.

(b)(4)

**Bid Item 0004:**

**Additive Bid Item 2: Task Order #1,** Consist of all work necessary to construct pipe installation beginning at Station 161+85 and ending at Station 220+00. Couplings to existing main and service pipe shall be required at multiple locations. All work shall be in accordance with the drawings and specifications for this project.

(b)(4)

**Bid Item 0005:**

**Additive Bid Item 3: Task Order #1,** Consist of all work necessary to construct pipe installation beginning at Station 599+80 and ending at Station 631+60. Couplings to existing main and service pipe shall be required at multiple locations. All work shall be in accordance with the drawings and specifications for this project.

(b)(4)

**Bid Item 0007:**

Potential monetary award for safety conscious performance. See paragraph H5 on page 15. (2% of bid item 0002 only) **Not to exceed** (b)(4)

(b)(4)

\*\*The award amount and the potential monetary award for safety conscious performance will be negotiated for any additional task orders issued under this contract.

**Total for Bid Items 0002- Bid Item 0007:                      \$4,973,400.00**

**C.1 COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK  
(NFS) (52.211-10) (APR 1984)**

The Contractor shall be required to (a) commence work under this contract within ten (10) calendar days after the date the Contractor receives the notice to proceed, (b) prosecute the work diligently, and (c) complete the entire work ready for use not later than **(545) calendar days (Bid Item 0002, Additive Bid Item #1, Additive Bid Item #2, and Additive Bid Item #3)** after receipt of the Notice to Proceed. The time stated for completion shall include final cleanup of the premises.

(End of Clause)

**NOTE:** If Additive Bid Item #1 is awarded an additional (45) calendar days shall be added to the base bid period of performance. If Additive Bid Item #2 is awarded an additional (90) calendar days will be added to the base bid period of performance. If Additive Bid Item #3 is awarded an additional (45) calendar days shall be added to the base bid period of performance. If Additive Bid Item #4 is awarded an additional (30) calendar days shall be added to the base bid period of performance. If all Additive items are awarded (1-4), the total period of performance shall be (575) calendar days.

## PART III - LIST OF DOCUMENTS, EXHIBITS AND OTHER ATTACHMENTS

## SECTION J - LIST OF ATTACHMENTS

J.1 LIST OF ATTACHMENTS

The following documents are attached hereto and made a part of this contract:

<u>ATTACHMENT</u>	<u>TITLE</u>	<u>DATE</u>	<u>PAGES</u>
A	Specification 12G00-G020, Rev 1 ( <b>CDROM</b> ) (Task Order #1)	03/13/2012	84
B	Drawings EMI-11B315-01 ( <b>CDROM</b> ) (Task Order #1)	03/13/2012	78
C	U. S. Dept. of Labor, Davis Bacon General Wage Determinations— Heavy, No. MS120062 Mod# 0	01/06/2012	3
D	PIV Card Issuance Procedures		4
E	Sauer Incorporated Safety Plan		

**ATTACHMENT C**

**Each Request for Proposal shall indicate which wage determination is applicable to that particular project. Bid Item 0002 entitled Task Order #1 shall use the following General Decision:**

General Decision Number: MS120062 01/06/2012 MS62

State: Mississippi

Construction Type: Heavy Including Water and Sewer Line Construction

County: Hancock County in Mississippi.

**HEAVY CONSTRUCTION PROJECTS: DOES NOT INCLUDE FLOOD CONTROL**

Modification Number	Publication Date
0	01/06/2012

\* ELEC0903-009 06/01/2011

	Rates	Fringes
ELECTRICIAN.....	\$ 23.60	12%+4.40

-----  
SUMS2008-080 07/07/2011

	Rates	Fringes
CARPENTER, Including Form Work...	\$ 14.00	0.00
CEMENT MASON/CONCRETE FINISHER...	\$ 12.29	0.00
LABORER: Common or General.....	\$ 8.50	0.00
LABORER: Pipelayer.....	\$ 12.00	0.00
OPERATOR: Backhoe.....	\$ 12.52	0.00
OPERATOR: Bulldozer.....	\$ 12.00	0.00
OPERATOR: Drill.....	\$ 11.52	1.24
OPERATOR: Loader (Front End)....	\$ 12.27	0.00
OPERATOR: Trackhoe.....	\$ 10.00	0.00
PAINTER (Brush and Spray).....	\$ 11.88	0.00
TRUCK DRIVER, Including Dump, Lowboy, Material, and Tractor Haul.....	\$ 10.65	0.00

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited types(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is union or non-union.

Union identifiers: An identifier enclosed in dotted lines beginning with characters other than "SU" denotes that the union classification and rate have found to be prevailing for that classification. Example: PLUM0198-005 07/01/2011. The first four letters, PLUM, indicate the international union and the four digit number, 0198, that follows indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. The date, 07/01/2011, following these characters is the effective date of the most current negotiated rate/collective bargaining agreement which would be July 1, 2011 in the above example.

Union prevailing wage rates will be updated to reflect any changes in the collective bargaining agreements governing the rate.

Non-Union identifiers: Classifications listed under an "SU" identifier were derived from survey data by computing average rates and are not union rates; however, the data used in computing these rates may include both union and non-union data. Example: SULA2004-007 5/13/2010. SU indicates the rates are not union rates, LA indicates the State of Louisiana; 2004 is the year of the survey; and 007 is an internal number used in producing the wage determination. A 1993 or later date, 5/13/2010, indicates the classifications and rates under that identifier were issued as a General Wage Determination on that date. Survey wage rates will remain in effect and will not change until a new survey is conducted.

### WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- \* an existing published wage determination
  - \* a survey underlying a wage determination
  - \* a Wage and Hour Division letter setting forth a position on a wage determination matter
  - \* a conformance (additional classification and rate) ruling
- On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations  
Wage and Hour Division  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

(END OF GENERAL DECISION)



<b>AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT</b>		1. CONTRACT ID CODE		PAGE OF PAGES 1 2	
2. AMENDMENT/MODIFICATION NO. 000001		3. EFFECTIVE DATE See Block 16C		4. REQUISITION/PURCHASE REQ. NO. N/A	
6. ISSUED BY NASA/Stennis Space Center Office of Procurement Building 1100 Room 251H Stennis Space Center MS 39529-6000		7. ADMINISTERED BY (If other than Item 6) NASA/Stennis Space Center Office of Procurement Building 1100 Room 251H Stennis Space Center MS 39529-6000		5. PROJECT NO. (If applicable) N/A	
8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code) SAUER SOUTHEAST 11223 PHILLIPS PARKWAY DR JACKSONVILLE FL 32256-1574		9A. AMENDMENT OF SOLICITATION NO. (x)		9B. DATED (SEE ITEM 11)	
CODE 0DX52 FACILITY CODE		10A. MODIFICATION OF CONTRACT/ORDER NO. NNS12AA83B NNS12AA95T		10B. DATED (SEE ITEM 13) 08/03/2012	

**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 extended. 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)  
64RA10/6100.3200/FC000000/818734.09.01.01/000/3200/64/CECX62012D/769Z Net Decrease: -\$4,526,600.00

**13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.**

CHECK ONE	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.
X	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 \_\_\_\_\_ 0 copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

POTABLE WATER SYSTEM UPGRADES

LIST OF CHANGES:

1. The purpose of this modification is to correct the total contract value and obligated funding amount from \$9,500,000.00 to \$4,973,400.00.

2. All other terms and conditions remain unchanged.

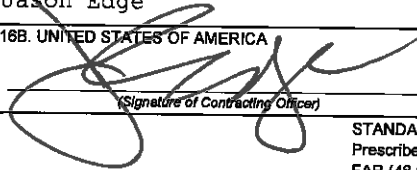
Reason for Modification : Other Administrative Action

Total Amount for this Modification: -\$4,526,600.00

New Total Amount for this Version: \$4,973,400.00

Continued ...

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) Jason Edge	
15B. CONTRACTOR/OFFEROR  (Signature of person authorized to sign)	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA  (Signature of Contracting Officer)	16C. DATE SIGNED 10 Aug 12

**CONTINUATION SHEET**

REFERENCE NO. OF DOCUMENT BEING CONTINUED  
 NNS12AA83B/NNS12AA95T/000001

PAGE OF  
 2 2

NAME OF OFFEROR OR CONTRACTOR  
 SAUER SOUTHEAST

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	<p>New Total Amount for this Award: \$4,973,400.00            Obligated Amount for this Modification:            -\$4,526,600.00            New Total Obligated Amount for this Award:            \$4,973,400.00</p> <p>CHANGES FOR LINE ITEM NUMBER: 1            Total Amount changed            from \$9,500,000.00 to \$4,973,400.00            Obligated Amount for this modification:            -\$4,526,600.00</p> <p>NEW DELIVERY LOCATION RECORD:            Quantity: 0            Amount: \$4,973,400.00            Days after award: Unassigned            Shipping Address:</p> <p>Mark For Address:</p> <p>CHANGES FOR ACCOUNTING CODE:            64RA10/6100.3200/FC000000/818734.09.01.01/000/3200            /64/CECX62012D/769Z            Account code changed from            64RA10/6100.3200/64/FC000000/818734.09.01.01/000/3            200/64/CECX62012D/769Z/1/43 to            64RA10/6100.3200/FC000000/818734.09.01.01/000/3200            /64/CECX62012D/769Z            Amount changed from \$9,500,000.00 to \$4,973,400.00</p> <p>Percent changed from 0 to 100</p> <p>Payment Terms:            Net 14 days            Cost Center: 64RA10 GI Account: 6100.3200 Order:            FC000000 WBS Element1: 818734.09.01.01 Item            Number: 000 Commitment Item: 3200 Funds Center:            64 Fund: CECX62012D Functional Area: 769Z            FOB: Destination</p>				

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE

PAGE OF PAGES

1 4

2. AMENDMENT/MODIFICATION NO.

000002

3. EFFECTIVE DATE

See Block 16C

4. REQUISITION/PURCHASE REQ. NO.

4200484811

5. PROJECT NO. (If applicable)

N/A

6. ISSUED BY

CODE

SSC

NASA/Stennis Space Center  
Office of Procurement  
Building 1100 Room 251H  
Stennis Space Center MS 39529-6000

7. ADMINISTERED BY (If other than Item 6)

CODE

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

SAUER SOUTHEAST  
11223 PHILLIPS PARKWAY DR  
JACKSONVILLE FL 32256-1574

(x)

9A. AMENDMENT OF SOLICITATION NO.

9B. DATED (SEE ITEM 11)

(x)

10A. MODIFICATION OF CONTRACT/ORDER NO.

NNS12AA83B

NNS12AA95T

10B. DATED (SEE ITEM 13)

08/03/2012

CODE 0DX52

FACILITY CODE

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 extended. 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)

See Schedule

Net Increase:

\$43,649.00

13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

CHECK ONE	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).
X	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF: FAR 52.243-4, CHANGES
	D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor  is not.  is required to sign this document and return 1 copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

POTABLE WATER SYSTEM UPGRADES

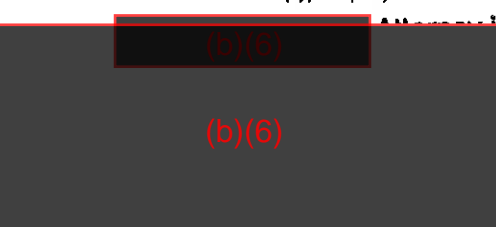
LIST OF CHANGES:

The purpose of this Modification is to incorporate FCR-001, FCR-002, FCR-003, FCR-004, FCR-005, FCR-006, FCR-007, FCR-008, FCR-009, FCR-010 and FCR-011 into Contract NNS12AA95T.

a. FCR-001: The contractor is required install a 14" gate valve in the new 14" HDPE potable water line west of the tee shown in Detail 28 (Connection to Existing 14" Water Main) on C-513 at approximately Station 165+15. Prior to installing the flowable fill in this existing A-C pipe section, salvage the new 14" gate valve installed in the existing potable water line and remove the new 14" HDPE cross connection pipe located north of the isolation valve. Installed a cap on this isolation valve for future extension. The work Continued ...

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

15A. NAME AND TITLE OF SIGNER (Type or print)

(b)(6)  
  
 (b)(6)

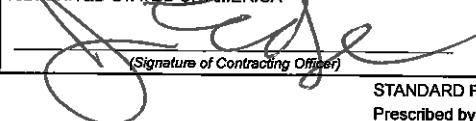
16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)

Jason Edge

15C. DATE SIGNED

10/29/13

16B. UNITED STATES OF AMERICA

  
 (Signature of Contracting Officer)

16C. DATE SIGNED

18 NOV 13

NAME OF OFFEROR OR CONTRACTOR  
SAUER SOUTHEAST

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	<p>required under FCR-001 is incorporated for an additional cost of \$13,000.00 with 0 calendar days being added to the performance period.</p> <p>b. FCR-002- Contractor Shall shift the 16" x 8" Reducer and Valve, as depicted in Drawing 7/C-505, Detail 7/C-421, attached to FCR-002.</p> <p>c. FCR-003: Contractor shall move the 3" Valve and install a 3"x2" Tapped plug as depicted on Drawing C-422, Detail B/C-422 attached to FCR-003.</p> <p>d. FCR-004: Contractor shall move the 10"x 8" reducer and the 8" Gate Valve as depicted in Drawing C-505, Detail 8/C-406 attached to FCR-004.</p> <p>e. FCR-005: Contractor shall move the 10" x 8" Reducer and the 8" Gate Valve and install a 8" x 2" tapping plug for testing as depicted in Drawing C-506, Detail 35/C-406, attached to FCR-005.</p> <p>f. FCR-006: Contractor shall move the 10" x 8" Reducer and 8" Gate Valve and install a 8" x 2" tapped plug for testing as depicted in Drawing C-505, Detail 8/C-406, attached to FCR-006.</p> <p>g. FCR-007: Contractor shall move the 14" x 12" Reducer and 12" Gate Valve and install a 12" x 2" tapped plug for testing as depicted in Drawing C-507, Detail 12/C-407, attached to FCR-007.</p> <p>h. FCR-008: Contractor shall move the 10" x 8" Reducer and 8" and install a 8" x 2" tapped plug for testing, as depicted in drawing C-507, Detail 13/C-407, attached to FCR-008.</p> <p>i. FCR-009: Contractor shall move the 14" x 12" Reducer and 12" Gate Valve and install a 12" x 2" tapped plug for testing, as depicted in Drawing C-507, Detail 14/C-408, attached to FCR-009.</p> <p>j. FCR-010: Contractor shall label underground valves as follows-Each valve tag is to be tack welded according to the referenced valve schedule attached to FCR-010. Tags shall be 2" x 4" x 1/16" engraved or stamped with the number indicated on the valve schedule attached to FCR-010. Tags shall be made of brass or stainless steel. Each tag shall be tack welded</p> <p>Continued ...</p>				

NAME OF OFFEROR OR CONTRACTOR  
SAUER SOUTHEAST

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	<p>to the underside of it respective valve cover. The work required under FCR-010 is incorporated for an additional cost of \$20,642.00 with 5 calendar days being added to the performance period.</p> <p>k. FCR-011: Contractor shall delete the Valve Box. After water samples have been taken and have passed water quality requirements, remove the riser and top valve. Install plug in the lower sample tap valve to seal and prevent any future contamination of the water main, as depicted in Drawing C-501, C-515 - 518, attached to FRC-011. The work required under FCR-011 is incorporated for an additional cost of \$10,007.00 with 14 calendar days being added to the performance period.</p> <p>l. The incorporation of the above FCR's result in a change in the total contract amount. The total contract amount is hereby changed from \$ 4,973,400.00 to read \$ 5,017,049.00, an increase of \$43,649.00. The contract completion change is hereby changed from April 8, 2014 to read April 27, 2014</p> <p>m. In consideration of the modification agreed to herein as complete equitable adjustments, SAUER, Inc. hereby releases the Government from any and all liability under this contract for further equitable adjustments attributable to the above change and the Government's acceptance of the same such facts or circumstances giving rise to this modification. (Except for NONE).</p> <p>n. All other terms and conditions remain unchanged.</p> <p>Reason for Modification : Other Administrative Action                      Period Of Performance End Date changed from 2017-08-02 00:00:00 to 2014-04-27 00:00:00                      Total Amount for this Modification: \$43,649.00                      New Total Amount for this Version: \$5,017,049.00                      New Total Amount for this Award: \$5,017,049.00                      Obligated Amount for this Modification: \$43,649.00                      New Total Obligated Amount for this Award: \$5,017,049.00                      Buyer changed                      from Jason Edge                      Continued ...</p>				

CONTINUATION SHEET

REFERENCE NO. OF DOCUMENT BEING CONTINUED  
 NNS12AA83B/NNS12AA95T/000002

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 4 4

NAME OF OFFEROR OR CONTRACTOR  
 SAUER SOUTHEAST

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	<p>to GEORGE R PICCOLO</p> <p>Contracting Officer Representative changed                      from Dale Woolridge</p> <p>to CASEY S WHEELER</p> <p>CHANGES FOR LINE ITEM NUMBER: 1                      Total Amount changed                      from \$4,973,400.00 to \$5,017,049.00                      Obligated Amount for this modification: \$43,649.00                      Start Date Added : 10/10/2012                      End Date Added : 04/27/2014</p> <p>NEW DELIVERY LOCATION RECORD:                      Quantity: 0                      Amount: \$5,017,049.00                      Days after award: Unassigned                      Shipping Address:</p> <p>Mark For Address:</p> <p>NEW ACCOUNTING CODE ADDED:                      Account code:                      64RA10/6100.3200/FC000000/818734.09.01.01/////000/                      3200/64/CECX62012D/769Z/8012/170130                      Cost Center 64RA10                      GL Account 6100.3200                      Order FC000000                      WBS Element1 818734.09.01.01                      WBS Element2                      Network                      Activity                      Earmarked Funds                      Item Number 000                      Commitment Item 3200                      Funds Center 64                      Fund CECX62012D                      Functional Area 769Z                      Appropriation 8012/170130                      Amount: \$43,649.00</p> <p>Payment Terms:                      Net 14 days                      FOB: Destination</p>				

<b>AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT</b>		1. CONTRACT ID CODE	PAGE OF PAGES 1 6
2. AMENDMENT/MODIFICATION NO. 000003	3. EFFECTIVE DATE See Block 16C	4. REQUISITION/PURCHASE REQ. NO. See Schedule	5. PROJECT NO. (If applicable) N/A
6. ISSUED BY NASA/Stennis Space Center Office of Procurement Building 1100 Room 251H Stennis Space Center MS 39529-6000	CODE SSC	7. ADMINISTERED BY (If other than Item 6)	CODE
8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code) SAUER SOUTHEAST 11223 PHILLIPS PARKWAY DR JACKSONVILLE FL 32256-1574		(x) 9A. AMENDMENT OF SOLICITATION NO.	
		9B. DATED (SEE ITEM 11)	
		x 10A. MODIFICATION OF CONTRACT/ORDER NO. NNS12AA83B NNS12AA95T	
		10B. DATED (SEE ITEM 13) 08/03/2012	
CODE 0DX52	FACILITY CODE		

**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 extended. 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)  
See Schedule Net Increase: \$249,720.00

**13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.**

CHECK ONE	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).
X	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF: FAR 52.243-4, CHANGES
	D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor  is not.  is required to sign this document and return 1 copies to the issuing office.

**14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)**

POTABLE WATER SYSTEM UPGRADES

LIST OF CHANGES:

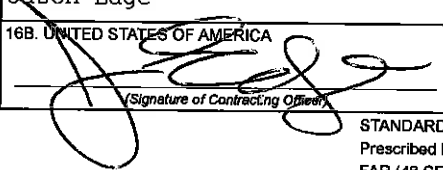
1. The purpose of this Modification is to definitize and incorporate the attached twenty eight (28) FCR's, reduce the safety incentive as a result of a safety mishap that occurred on October 21, 2013, and to compensate the contractor for delay costs as a result of the Government Furlough that occurred in October 2013, into Task Order NNS12AA95T.

Accordingly, Task Order NNS12AA95T is modified to include the following:

FCR-012: No cost change and no change in schedule. In accordance with the FCR, the contractor shall move the 10x8 reducer valve to the location shown as specified. With no change in price and schedule.

Continued ...

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

15A. NAME AND TITLE OF SIGNER (Type or print) (b)(6) Attorney in Fact	16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) Jason Edge
15C. DATE SIGNED 1/27/14	16B. UNITED STATES OF AMERICA  (Signature of Contracting Officer)
16C. DATE SIGNED 30 JAN 14	

**CONTINUATION SHEET**

REFERENCE NO. OF DOCUMENT BEING CONTINUED  
 NNS12AA83B/NNS12AA95T/000003

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NAME OF OFFEROR OR CONTRACTOR  
 SAUER SOUTHEAST

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	<p>FCR-013: No cost change and no change in schedule. In accordance with the FCR, the contractor shall delete the 16; 90-degree fitting and install a 16" Tee and install a 16" HDPE cap, and install a 2" tap saddle with a Sample Tap. Final connection to be fuse welded Tee in trench and installing 2-each transition couplings.</p> <p>FCR-014: No cost change and no change in schedule. In accordance with the FCR, the contractor shall move the 8 x 6 reducer and the 8" valve to the location as described in the FCR and install a 8 x 2 tapped cap for sampling.</p> <p>FCR-015: In accordance with the FCR, the contractor shall complete work as stated in the FCR. Contractor shall install Isolation valves and valve boxes near the connection of the HDPE line. The total amount of FCR-015 is \$18,026.00 with 4 days added to performance period.</p> <p>FCR-016: No cost change and no change in schedule. In accordance with the FCR, the contractor shall move the 14 x 12 reducer and the 12" valve and install a 12 x 3 tapped cap for sampling as specified.</p> <p>FCR-017: In accordance with the FCR, the contractor shall install a 1" gate valve and connect. Contractor shall maintain 10 foot separation between the pipes and shall install a 16 x 1 tapping sleeve and a 1' corporation stop and a 1" gate valve. The total amount of FCR-017 is \$16,974.00 and 5 days added to performance period.</p> <p>FCR-018: No cost change and no change in schedule. In accordance with the FCR, the contractor shall relocate the 10x8 reducer and the 8" gate valve as specified.</p> <p>FCR-019: No cost change and no change in schedule. In accordance with the FCR, the contractor shall delete identified pipe and shall install a 14" MJ Plug and install a 14" valve for future use.</p> <p>FCR-020: No cost change and no change in schedule. In accordance with the FCR, the</p> <p>Continued ...</p>				



**CONTINUATION SHEET**

REFERENCE NO. OF DOCUMENT BEING CONTINUED  
 NNS12AA83B/NNS12AA95T/000003

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 3 6

NAME OF OFFEROR OR CONTRACTOR  
 SAUER SOUTHEAST

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	<p>contractor shall move the 10x8 reducer and the 8" valve to the specified location.</p> <p>FCR-021: No cost change and no change in schedule. In accordance with the FCR, the contractor shall move the 14x14 reducer and the 14" valve as specified.</p> <p>FCR-022: No cost change and no change in schedule. In accordance with the FCR, the contractor shall move the 16x14 reducer and the 14" valve as specified.</p> <p>FCR-023: No cost change and no change in schedule. In accordance with the FCR, the contractor shall install a 14" HDPE cap and a 2" tapping saddle as specified. When flushing, testing and disinfection are complete, contractor shall tie-in to the existing 12" A-C WM.</p> <p>FCR-024: No cost change and no change in schedule. In accordance with the FCR, the contractor shall move the reducers and valves as specified.</p> <p>FCR-025: No cost change and no change in schedule. In accordance with the FCR, the contractor shall move the 10 x 8 reducer and the 8" valve as specified.</p> <p>FCR-026: No cost change and no change in schedule. In accordance with the FCR, the contractor shall install a 14" MJ plug in the 14" valve for future use.</p> <p>FCR-027: No cost change and no change in schedule. In accordance with the FCR, the contractor shall install a 14" HDPE cap and a 2" tapping saddle for testing as specified. When flushing, testing and disinfection is complete, contractor shall tie-in to the existing 12" AC-WM.</p> <p>FCR-028: No cost change and no change in schedule. In accordance with the FCR, the contractor shall install a 14" MJ plug in the MJ valve for future use.</p> <p>FCR-029: No cost change and no change in schedule. In accordance with the FCR, the contractor shall move the 10x8 reducer and the 8" valve to the specified location.</p> <p>Continued ...</p>				

**CONTINUATION SHEET**

REFERENCE NO. OF DOCUMENT BEING CONTINUED  
NNS12AA83B/NNS12AA95T/000003

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4 6

NAME OF OFFEROR OR CONTRACTOR  
SAUER SOUTHEAST

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	<p>valve as specified.</p> <p>FCR-030: No cost change and no change in schedule. In accordance with the FCR, the contractor shall move the reducers and valves as specified.</p> <p>FCR-031: No cost change and no change in schedule. In accordance with the FCR, the contractor shall move the 10x8 reducer and the 8" valve as shown.</p> <p>FCR-032: No cost change and no change in schedule. In accordance with the FCR, the contractor shall move the 10x8 reducer and the 8" valve as specified.</p> <p>FCR-033: No cost change and no change in schedule. In accordance with the FCR, the contractor shall move the 10 x 8 reducer and the 8" valve as specified.</p> <p>FCR-034: No cost change and no change in schedule. In accordance with the FCR, the contractor shall move the 10 x 8 reducer and the 8" valve as specified.</p> <p>FCR-035: No cost change and no change in schedule. In accordance with the FCR, the contractor shall move the 10x8 reducer the 8" valve as specified.</p> <p>FCR-036: No cost change and no change in schedule. In accordance with the FCR, the contractor shall move the 10x8 reducer and the 8" valve as specified.</p> <p>FCR-037: No cost change and no change in schedule. In accordance with the FCR, the contractor shall move the 10x8 reducer and the 8" valve as specified.</p> <p>FCR-038: No cost change and no change in schedule. In accordance with the FCR, the contractor shall install a 16" MJ plug in the 16" valve for future use.</p> <p>FCR-039: No cost change and no change in schedule. In accordance with the FCR, the contractor shall move the 10x8 reducer and the 8"</p> <p>Continued ...</p>				

**CONTINUATION SHEET**

REFERENCE NO. OF DOCUMENT BEING CONTINUED  
 NNS12AA83B/NNS12AA95T/000003

PAGE OF  
 5 6

NAME OF OFFEROR OR CONTRACTOR  
 SAUER SOUTHEAST

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	<p>valve as specified.</p> <p>2. The improper possession of expired dig permits is considered a safety mishap that occurred on October 21, 2013 and warrants a reduction of (\$1,000.00) of the available safety incentive. Therefore the available safety incentive is reduced from \$25,000.00 to \$24,000.00.</p> <p>3. The contractors Request for Equitable Adjustment as a result of the Government Furlough has been reviewed and reimbursed in the amount of \$215,720.00 for all delay costs associated with the Government Furlough. As a result of the Government delay the performance period has been changed. The change includes a day for day reimbursement, re-mobilization time, and a loss of production time, which add a total of 20 additional calendar days to the performance period.</p> <p>4. MOD 002 incorrectly stated the Task Order completion date at April, 8, 2014. The correct Task Order completion dated should have read June 28, 2014. MOD 002 correctly added (19) calendar days, therefore the completion date should have changed to July 17, 2014.</p> <p>5. The Task Order completion date is hereby increased a total of (29) calendar days, therefore the completion dated is changed from July 17, 2014 to read August 15, 2014.</p> <p>6. As a result of the changes identified, the total contract value is hereby changed from: \$5,017,049.00 to read: \$5,266,769.00, a net increase of: \$249,720.00</p> <p>7. All other terms and conditions remain unchanged.</p> <p>8. In consideration of the modification agreed to herein as complete equitable adjustments, Sauer, Inc. hereby releases the Government from any and all liability under this contract for further equitable adjustments attributable to the above change and the Government's acceptance of the same such facts or circumstances giving rise to this modification except for: (NONE).</p> <p>Continued ...</p>				

**CONTINUATION SHEET**

REFERENCE NO. OF DOCUMENT BEING CONTINUED  
 NNS12AA83B/NNS12AA95T/000003

PAGE OF  
 6 6

NAME OF OFFEROR OR CONTRACTOR  
 SAUER SOUTHEAST

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	Reason for Modification : Supplemental Agreement for work within scope Period Of Performance End Date changed from 2014-04-27 00:00:00 to 2014-08-15 00:00:00 Total Amount for this Modification: \$249,720.00 New Total Amount for this Version: \$5,266,769.00 New Total Amount for this Award: \$5,266,769.00 Obligated Amount for this Modification: \$249,720.00 New Total Obligated Amount for this Award: \$5,266,769.00 CHANGES FOR LINE ITEM NUMBER: 1 Total Amount changed from \$5,017,049.00 to \$5,266,769.00 Obligated Amount for this modification: \$249,720.00  NEW DELIVERY LOCATION RECORD: Quantity: 0 Amount: \$5,266,769.00 Days after award: Unassigned Shipping Address:  Mark For Address:  CHANGES FOR ACCOUNTING CODE: 64RA10/6100.3200/FC000000/818734.09.01.01/000/3200 /64/CECX62012D/769Z Amount changed from \$4,973,400.00 to \$4,972,400.00 Percent changed from 100 to 99.11005  NEW ACCOUNTING CODE ADDED: Account code: 64RA10/6100.3200/FC000000/818734.09.01.01/000/3200 /64/CECX62012D/769Z/8012/170130  NEW ACCOUNTING CODE ADDED: Account code: 64RA10/6100.3200/64/FC000000/818734.09.01.01/000/3 200/64/CECX62012D/769Z/8012/170130/1/2  NEW ACCOUNTING CODE ADDED: Account code: 64RA10/6100.3200/64/FC000000/818734.09.01.01/000/3 200/64/CECX62012D/769Z/8012/170130/1/43 Payment Terms: Net 14 days FOB: Destination				

<b>AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT</b>		1. CONTRACT ID CODE	PAGE OF PAGES 1   3
2. AMENDMENT/MODIFICATION NO. 000004	3. EFFECTIVE DATE 03/31/2014	4. REQUISITION/PURCHASE REQ. NO. 4200507446	5. PROJECT NO. (If applicable) N/A
6. ISSUED BY NASA/Stennis Space Center Office of Procurement Building 1100 Room 251H Stennis Space Center MS 39529-6000	CODE SSC	7. ADMINISTERED BY (If other than Item 6)	CODE
8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code) SAUER SOUTHEAST 11223 PHILLIPS PARKWAY DR JACKSONVILLE FL 32256-1574		(x) 9A. AMENDMENT OF SOLICITATION NO.	
CODE 0DX52		FACILITY CODE	
		(x) 9B. DATED (SEE ITEM 11)	
		x 10A. MODIFICATION OF CONTRACT/ORDER NO. NNS12AA83B NNS12AA95T	
		10B. DATED (SEE ITEM 13) 08/03/2012	

**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 extended. 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)  
See Schedule Net Increase: \$6,676.45

**13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.**

CHECK ONE	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).
X	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF FAR 52.243-4, CHANGES
	D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor  is not.  is required to sign this document and return 1 copies to the issuing office.

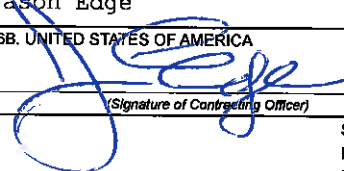
**14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)**

POTABLE WATER SYSTEM UPGRADES  
LIST OF CHANGES:

1. The purpose of this Modification is to definitize and incorporate FCR 42, reduce the safety incentive as a result of a safety mishap's that occurred on November 7, 2013 and December 10, 2013 and to reimburse NASA for the repair of utility strikes that occurred on August 23, 2013, November 7, 2013 and December 10, 2013 into Task Order NNS12AA95T. Accordingly, Task Order NNS12AA95T is modified to include the following:

FCR-042: In accordance with the FCR, the contractor shall tie in the shut off valve inside the security fence area to finalize connection to Bldg 3305 and provide shoring in order to Continued ...

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

15. <b>Attorney In Fact</b> (b)(6)	16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) Jason Edge
15C. DATE SIGNED 4/1/14	16B. UNITED STATES OF AMERICA  (Signature of Contracting Officer)
15D. DATE SIGNED (b)(6)	16C. DATE SIGNED 14 APRIL 14

**CONTINUATION SHEET**

REFERENCE NO. OF DOCUMENT BEING CONTINUED  
 NNS12AA83B/NNS12AA95T/000004

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NAME OF OFFEROR OR CONTRACTOR  
 SAUER SOUTHEAST

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	<p>connect utilities as per the specifications and drawings. The total amount of FCR-042 is \$17,656.00 with 7 days added to performance period.</p> <p>2. The strike of a buried natural gas line by the subcontractor is considered a safety mishap that occurred on November 7, 2013 and the strike of a sunken concrete encasing and a junction box that supplied electricity to the traffic lights at the intersection of J Road and Trent Lott Parkway is considered a safety mishap that occurred on December 10, 2013. The aforementioned safety mishaps warrant a reduction of (\$6,000.00) of the available safety incentive. Therefore the available safety incentive is reduced from \$24,000.00 to \$18,000.00.</p> <p>3. As a result of the contractors utility strikes the incurred repair costs will be deducted from the Task Order. August 23, 2013 Potable Water line Break at USM Building, \$2,511.81, November 7, 2013 Natural Gas Line Break, \$833.84 and on December 10, 2013, Electrical Line Break, \$1,633.90. Total reimbursed repair costs warrants a reduction of (\$4,979.55).</p> <p>4. The Task Order completion date is hereby increased a total of (7) calendar days, therefore the completion dated is changed from August 15, 2014 to read August 22, 2014.</p> <p>5. As a result of the changes identified, the total contract value is hereby changed from: \$5,266,769.00 to read: \$5,273,445.45, a net increase of: \$6,676.45</p> <p>6. All other terms and conditions remain unchanged.</p> <p>7. In consideration of the modification agreed to herein as complete equitable adjustments, Sauer, Inc. hereby releases the Government from any and all liability under this contract for further equitable adjustments attributable to the above change and the Government's acceptance of the same such facts or circumstances giving rise to this modification except for: (NONE).</p> <p>Continued ...</p>				

NAME OF OFFEROR OR CONTRACTOR  
SAUER SOUTHEAST

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	<p>Reason for Modification : Supplemental Agreement for work within scope</p> <p>Total Amount for this Modification: \$6,676.45</p> <p>New Total Amount for this Award: \$5,273,445.45</p> <p>Obligated Amount for this Modification: \$6,676.45</p> <p>CHANGES FOR LINE ITEM NUMBER: 1</p> <p>Total Amount changed from \$5,266,769.00 to \$5,273,445.45</p> <p>Obligated Amount for this modification: \$6,676.45</p> <p>NEW ACCOUNTING CODE ADDED:</p> <p>Account code: 64RA10/6100.3200/FC000000/818734.09.01.01/000/3200/64/CECX62012D/769Z/8012/170130</p> <p>Cost Center 64RA10</p> <p>GL Account 6100.3200</p> <p>Order FC000000</p> <p>WBS Element1 818734.09.01.01</p> <p>Commitment Item 3200</p> <p>Funds Center 64</p> <p>Fund CECX62012D</p> <p>Functional Area 769Z</p> <p>Appropriation 8012/170130</p> <p>Amount: \$6,676.45</p> <p>Payment Terms: Net 14 days FOB: Destination</p>				

<b>AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT</b>		1. CONTRACT ID CODE	PAGE OF PAGES 1   2
2. AMENDMENT/MODIFICATION NO. 000005	3. EFFECTIVE DATE See Block 16C	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO. (if applicable) N/A
6. ISSUED BY NASA/Stennis Space Center Office of Procurement Building 1100 Room 251H Stennis Space Center MS 39529-6000	CODE SSC	7. ADMINISTERED BY (if other than item 6)	CODE
8. NAME AND ADDRESS OF CONTRACTOR (no., street, county, State and ZIP Code) SAUER SOUTHEAST 11223 PHILLIPS PARKWAY DR JACKSONVILLE FL 32256-1574		(x) 9A. AMENDMENT OF SOLICITATION NO.	9B. DATED (SEE ITEM 11)
CODE CDX52	FACILITY CODE	x 10A. MODIFICATION OF CONTRACT/ORDER NO. NNS12AA83B NNS12AA95T	10B. DATED (SEE ITEM 13) 08/03/2012

**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 extended. 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. 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)**

See Schedule

**13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.**

CHECK ONE	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(e)
X	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF FAR 52.243-4, CHANGES
	D. OTHER (Specify type of modification and authority)

**E. IMPORTANT:** Contractor  is not  is required to sign this document and return 1 copies to the issuing office.

**14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)**

POTABLE WATER SYSTEM UPGRADES

**LIST OF CHANGES:**

The purpose of this modification is to extend the contract period of performance at no additional cost to the Government. Accordingly, Task Order NNS12AA95T is modified to include the following:

- The Task Order completion date is hereby increased by a total of 39 calendar days as a result of adverse weather delays through March 2014. Contract completion date is hereby changed from August 22, 2014 to September 30, 2014.

Continued ...

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

**15A. NAME AND TITLE OF SIGNER (Type or print)**

(b)(6) Attorney in Fact

**18A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)**

Gerald Norris

**15C. DATE SIGNED**

5/19/14

**18B. UNITED STATES OF AMERICA**

*Gerald Norris*  
(Signature of Contracting Officer)

**18C. DATE SIGNED**

5-20-14



**CONTINUATION SHEET**

REFERENCE NO. OF DOCUMENT BEING CONTINUED  
 NNS12AA83B/NNS12AA95T/000005

PAGE OF  
 2 2

NAME OF OFFEROR OR CONTRACTOR  
 SAUER SOUTHEAST

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	<p>2. All other terms and conditions remain unchanged.</p> <p>3. In consideration of the modification agreed to herein as complete equitable adjustments, Sauer, Inc. hereby releases the Government from any and all liability under this contract for further equitable adjustments attributable to the above change and the Government's acceptance of the same such facts or circumstances giving rise to this modification except for: (NONE).</p> <p>Reason for Modification : Supplemental Agreement for work within scope                      Period Of Performance End Date changed from 2014-08-22 to 2014-09-30                      Total Amount for this Modification: \$0.00                      New Total Amount for this Version: \$0.00                      New Total Amount for this Award: \$5,273,445.45                      Contracting Officer changed                      from Jason Edge                      to Gerald Norris</p> <p>Payment Terms:                      Net 14 days</p>				

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT		1. CONTRACT ID CODE	PAGE OF PAGES
2. AMENDMENT/MODIFICATION NO. 000006		3. EFFECTIVE DATE See Block 16C	1 3
6. ISSUED BY NASA/Stennis Space Center Office of Procurement Building 1100 Room 251H Stennis Space Center MS 39529-6000		4. REQUISITION/PURCHASE REQ. NO. 4200522247	5. PROJECT NO. (If applicable) N/A
CODE SSC		7. ADMINISTERED BY (If other than item 6)	CODE
8. NAME AND ADDRESS OF CONTRACTOR (No, street, county, State and ZIP Code) SAUER SCUTHEAST 11223 PHILLIPS PARKWAY DR JACKSONVILLE FL 32256-1574		(x) 9A. AMENDMENT OF SOLICITATION NO.	9B. DATED (SEE ITEM 11)
CODE ODX52 FACILITY CODE		X 10A. MODIFICATION OF CONTRACT/ORDER NO. NNS12AA83B NNS12AA95T	10B. DATED (SEE ITEM 13) 08/03/2012

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 extended. 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)  
See Schedule Net Increase: \$25,000.00

13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

CHECK ONE	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).
X	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF FAR 52.243-4, CHANGES
	D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor  is not.  is required to sign this document and return 1 copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

POTABLE WATER SYSTEM UPGRADES


a. The purpose of this modification is to incorporate attached Field Change Request (FCR)-044 (1 page) into the contract. FCR-044 requires an additional connection into the new water main at Building 3219. See attached FCR for further detail.

b. The additional work required above shall be accomplished for an additional cost of \$25,000.00.

c. As a result of the above changes, the total contract amount is hereby changed from \$5,273,445.45 to \$5,298,445.45.

Continued ...

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

15A. NAME AND TITLE OF SIGNER (Type or print) (b)(6) Attorney in Fact	16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) Gerald Norris
15C. DATE SIGNED 8/2/14	16B. UNITED STATES OF AMERICA  (Signature of Contracting Officer)
(b)(6)	16C. DATE SIGNED 8-26-14

**CONTINUATION SHEET**

REFERENCE NO. OF DOCUMENT BEING CONTINUED  
 NNS12AA83B/NNS12AA95T/000006

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 2 3

NAME OF OFFEROR OR CONTRACTOR  
 SAUER SCOTHEAST

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	<p>d. The contract completion date is hereby changed from September 30, 2014 to October 1, 2014.</p> <p>e. All other terms and conditions remain unchanged.</p> <p>f. In consideration of the modification agreed to herein as complete equitable adjustments, Sauer, Inc., hereby releases the Government from any and all liability under this contract for further equitable adjustments attributable to the above change and the Government's acceptance of the same such facts or circumstances giving rise to this modification except for (NONE).</p> <p>LIST OF CHANGES:</p> <p>Total Amount for this Modification: \$0.00                      New Total Amount for this Version: \$5,273,445.45                      New Total Amount for this Award: \$5,273,445.45                      Obligated Amount for this Modification: \$25,000.00                      New Total Obligated Amount for this Award: \$5,298,445.45</p> <p>CHANGES FOR LINE ITEM NUMBER: 1                      Obligated Amount for this modification: \$25,000.00</p> <p>NEW DELIVERY LOCATION RECORD:                      Quantity: 0                      Amount: \$5,273,445.45</p> <p>NEW ACCOUNTING CODE ADDED:                      Account code:                      64RA10/6100.3200/FC000000/818734-09.01.01/000/3200                      /64/CECX62012D/769Z/8012/170130                      Cost Center 64RA10                      GL Account 6100.3200                      Order FC000000                      WBS Element1 818734.09.01.01                      WBS Element2                      Network                      Activity                      Earmarked Funds                      Item Number 000                      Commitment Item 3200                      Funds Center 64                      Fund CECX62012D                      Functional Area 769Z                      Appropriation 8012/170130                      Continued ...</p>				

**CONTINUATION SHEET**

REFERENCE NO OF DOCUMENT BEING CONTINUED  
NNS12AA83B/NNS12AA95T/000006

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3 3

NAME OF OFFEROR OR CONTRACTOR  
SAUER SCUTHEAST

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	Quantity: 0 Amount: \$25,000.00  Payment Terms: Net 14 days FOB: Destination				



National Aeronautics and  
Space Administration  
John C. Stennis Space Center  
Stennis Space Center, MS 38527-6000

# FIELD CHANGE REQUEST (FCR)

FCR No 044

Contractor	<u>Sauer, Inc.</u>	Contract No.	<u>NNS12AA95T</u>
Initiator/Company	<u>Sauer, Inc.</u>	EMI No.	<u>11B315-01</u>
Spec./Section	<u>12G00-G020</u>	Drawing No.	_____
		Date	_____

**Description of problem and recommended change:**

**Problem Statement:** During the execution of the work, we discovered that building 3219 had a two (2) inch connection that is being serviced by the existing main. This connection is not detailed in the construction drawings. **Solution:** Per the RFI 23 response, we have priced the addition of this connection. **Scope of Work – Building 3219 Connection** 1.) Excavate and expose the new water main at station + 947+00 2.) Install 14" x 2" tapping saddle, with 2" brass corporation stop. Hot tap the existing main. 3.) Install 2" shut off valve no greater than 5-feet from the hot tap connection. 4.) Install approximately 500 linear feet of 2-inch HDPE pipe to building 3219 from the hot tap. 5.) Install a 2" shut off valve no greater than 5-feet from the existing building 3219 connect point. 6.) Flush new line, following all approved flushing procedures, to include, back flow protection, metering of water use and flow rate, SHA will use a third party metering company (CC Lynch). 7.) Hydrostatic test of the new line. 8.) Perform the disinfection procedures, chlorination and de-chlorination of the new line. 9.) Retrieve bacteriological samples, two consecutive days. 10.) Perform final tie in for building 3219. 11.) Remove and replace concrete as needed to make final tie in. 12.) Remove and replace section of stone driveway at building 3219 during installation work.

Cost Impact	<input type="checkbox"/> No <input checked="" type="checkbox"/> Yes	Not to Exceed	<u>(b)(4)</u>
Schedule Impact	<input type="checkbox"/> No <input type="checkbox"/> Yes	No. of Days	<u>1</u>
Project Manager	<u>(b)(6)</u>	Date	<u>7/1/14</u>

**Evaluation:**

*Design Deficiency; Design Omission*  
*Approved 7-16-14*

NASA Project Manager	<u>(b)(6)</u>	Date	<u>7/16/14</u>
Construction Engineer	<u>(b)(6)</u>	Date	<u>7/16/14</u>
Quality Engineer	<u>(b)(6)</u>	Date	_____
Safety Engineer	<u>(b)(6)</u>	Date	<u>7/16/2014</u>
Environmental	<u>(b)(6)</u>	Date	<u>7/16/14</u>
Design Engineer	<u>(b)(6)</u>	Date	<u>7/16/14</u>
CCB Chair	<u>(b)(6)</u>	Date	<u>7/16/14</u>

CCB Approved for Implementation  Yes  No 16

COTR (Signature) Date 7/16/14

Contracting Officer \_\_\_\_\_ Date \_\_\_\_\_

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT 1. CONTRACT ID CODE PAGE OF PAGES  
 1 2

2. AMENDMENT/MODIFICATION NO. 3. EFFECTIVE DATE 4. REQUISITION/PURCHASE REQ. NO. 5. PROJECT NO. (if applicable)  
 000007 See Block 16C N/A

6. ISSUED BY CODE SSC 7. ADMINISTERED BY (if other than Item 6) CODE  
 NASA/Stennis Space Center  
 Office of Procurement  
 Building 1100 Room 251H  
 Stennis Space Center MS 39529-6000

8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code) 9A. AMENDMENT OF SOLICITATION NO.  
 SAUER SOUTHEAST (x)  
 11223 PHILLIPS PARKWAY DR 9B. DATED (SEE ITEM 11)  
 JACKSONVILLE FL 32256-1574  
 10A. MODIFICATION OF CONTRACT/ORDER NO.  
 NNS12AA83B  
 NNS12AA95T  
 10B. DATED (SEE ITEM 13)  
 08/03/2012

CODE ODX52 FACILITY CODE 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 extended. 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)  
 See Schedule

13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

CHECK ONE	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 48.103(b).
X	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF: FAR 52.243-4, CHANGES
	D. OTHER (Specify type of modification and authority)

8. IMPORTANT: Contractor is not. X is required to sign this document and return 1 copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UDF section headings, including solicitation/contract subject matter where feasible.)

POTABLE WATER SYSTEM UPGRADES  
 a. The purpose of this modification is to incorporate attached Field Change Request (FCR)-046A (1 page) into the contract. FCR-046A changes the jack and bore method specified for the intersection of Trent Lott Blvd. and Saturn Dr to horizontal directional drilling (HDD). See attached FCR for further detail.  
 b. This work shall be accomplished at no additional cost to the contract. The total contract amount of \$5,298,445.45 is unchanged.  
 c. The contract completion date is hereby changed from October 1, 2014 to December 1, 2014.

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

(b)(6)	15A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) Jason Edge
(b)(6)	15B. DATE SIGNED 9-30-14
	15C. UNITED STATES OF AMERICA (Signature of Contracting Officer)
	15D. DATE SIGNED 30 SEP 14

**CONTINUATION SHEET**

REFERENCE NO. OF DOCUMENT BEING CONTINUED  
 NNS12AA83B/NNS12AA95T/000007

PAGE OF  
 2 2

NAME OF OFFEROR OR CONTRACTOR  
 SAUER SOUTHEAST

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	<p>d. All other terms and conditions remain unchanged.</p> <p>e. In consideration of the modification agreed to herein as complete equitable adjustments, Sauer, Inc., hereby releases the Government from any and all liability under this contract for further equitable adjustments attributable to the above change and the Government's acceptance of the same such facts or circumstances giving rise to this modification except for (NONE).</p> <p>Payment Terms:                      Net 14 days                      FOB: Destination</p>				



National Aeronautics and  
Space Administration  
John C. Stennis Space Center  
Stennis Space Center, MS 39529-8000

# FIELD CHANGE REQUEST (FCR)

FCR No 046A

**Contractor** SAUER, INC.  
**Initiator/Company** \_\_\_\_\_  
**Spec./Section** 12G00-G020/

**Contract No.** NNS12AA95T  
**EMI No.** 11B315-01  
**Drawing No.** C-417 & C-515  
**Date** 15 September 2014

**Description of problem and recommended change:**

See attached Proposal dated 15 September 2014  
See attached Letter from (b)(4) dated 10 September 2014.  
See attached NASA response to RFI 022C dated 08 September 2014  
See attached RFI 022C dated 27 August 2014.

Due to the unstable soil conditions discovered, we submit our formal proposal covering cost to install the 16" HDPE pipe at Trent Lott using a horizontal directional drilling (HDD) method in lieu of the jack and bore method prescribed in the plans and specifications.

**Cost Impact**  No  Yes **Not to Exceed** (b)(4)  
**Schedule Impact**  No  Yes **No. of Days** ~~45~~ 60  
**Project Manager** (b)(6) **Date** 15 September 2014

**DISPOSITION (NASA)**

**Evaluation:**

Approved 9-24-14 Differing Site Conditions; Field Re-route

NASA Project Manager		Date	9/24/14
Construction Engineer	(b)(6)	Date	9/29/14
Quality Engineer	(b)(6)	Date	9/29/14
Safety Engineer	(b)(6)	Date	9/29/14
Environmental	(b)(6)	Date	9/24/14
Design Engineer	(b)(6)	Date	9/29/14
CCB Chair	(b)(6)	Date	9/24/14

CCB Approved for Implementation  Yes  No

**COTR** **Date** 9/24/14  
**Contracting Officer** \_\_\_\_\_ **Date** \_\_\_\_\_



AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

2. AMENDMENT/MODIFICATION NO. 000008		3. EFFECTIVE DATE See Block 16C	4. REQUISITION/PURCHASE REQ. NO. 4200530454	5. PROJECT NO. (if applicable) N/A
6. ISSUED BY NASA/Stennis Space Center Office of Procurement Building 1100 Room 251H Stennis Space Center MS 39522-6000		7. ADMINISTERED BY (if other than Item 6) SSC	PAGE OF PAGES 1 2	

9. NAME AND ADDRESS OF CONTRACTOR (No. street, county, State and ZIP Code) SAUER SOUTHEAST 11223 PHILLIPS PARKWAY DR JACKSONVILLE FL 32256-1574		9A. AMENDMENT OF SOLICITATION NO. (X)
CODE ODX52		9B. DATED (SEE ITEM 11)
FACILITY CODE		10A. MODIFICATION OF CONTRACT/ORDER NO. NNS12AA83B NNS12AA95T
		10B. DATED (SEE ITEM 13) 08/03/2012

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 extended.  
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) See Schedule	Net Increase:	\$6,171.00
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13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

CHECK ONE	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 data, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
X	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF: FAR 52.243-4, CHANGES
	D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor is not X is required to sign this document and return \_\_\_\_\_ 1 \_\_\_\_\_ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

POTABLE WATER SYSTEM UPGRADES

a. The purpose of this modification is to incorporate attached Field Change Request (FCR)-047 (2 pages) into the contract. FCR-047 requires a custom fabricated transition coupling at the final connection located at station 916+00 (Phase 5). See attached FCR for further detail.

b. This change shall be accomplished for an additional cost of \$6,171.00.

c. As a result of the above changes, the total contract amount is hereby changed from \$5,298,445.45 to \$5,304,616.45.

Continued ...

15A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) Ice President Jason Edge		15C. DATE SIGNED 10-6-14	15B. UNITED STATES OF AMERICA	16C. DATE SIGNED 6-04-14
		(Signature of Contracting Officer)		

STANDARD FORM 30 (REV. 10-83)  
Prescribed by GSA  
FAR (48 CFR) 53.243

(b)(6)

NAME OF OFFEROR OR CONTRACTOR  
SAUER SOUTHEAST

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	<p>d. The contract completion date of December 1, 2014 remains unchanged.</p> <p>e. All other terms and conditions remain unchanged.</p> <p>f. In consideration of the modification agreed to herein as complete equitable adjustments, Sauer, Inc., hereby releases the Government from any and all liability under this contract for further equitable adjustments attributable to the above change and the Government's acceptance of the same such facts or circumstances giving rise to this modification except for (NONE).</p> <p>NEW ACCOUNTING CODE ADDED:  Account code:  64RA10/6100.3200/64/FC000000/818734.09.01.01/000/3200/64/CECX62012D/769Z/8012/170130/1/2  Cost Center 64RA10  GL Account 6100.3200  Order FC000000  WBS Element1 818734.09.01.01  WBS Element2  Network  Activity  Earmarked Funds  Item Number 000  Commitment Item 3200  Funds Center 64  Fund CECX62012D  Functional Area 769Z  Appropriation 8012/170130  Quantity: 0  Amount: \$6,171.00  Percent: .11647  Subject To Funding:  Payment Address:</p> <p>Payment Terms:  Net 14 days  FOB: Destination</p>				



National Aeronautics and  
Space Administration  
John C. Stennis Space Center  
Stennis Space Center, MS 38529-5600

# FIELD CHANGE REQUEST (FCR)

FCR No 047

<b>Contractor</b>	<u>SAUER, INC.</u>	<b>Contract No.</b>	<u>NNS12AA95T</u>
<b>Initiator/Company</b>	<u>S H Anthony</u>	<b>EMI No.</b>	<u>11B315-01</u>
<b>Spec./Section</b>	<u>12G00-G020/33 11 00</u>	<b>Drawing No.</b>	<u>C-410</u>
		<b>Date</b>	<u>30 September 2014</u>

**Description of problem and recommended change:**

**Final Connection at Station 916+00 (Phase 5)**

We have discovered that the existing A-C WM has a varying OD range - oval. Please see the attached (b)(4) dated 30 Sept. 2014 for a detail explanation.

A custom connection has been ordered that will fit the 12" HDEP Pipe on one end and the oval A-C pipe on the other end.

Please see the attached Product Data, Drawing, S/N 0105-LF005-6900 with back-up.

<b>Cost Impact</b>	<input type="checkbox"/> No <input checked="" type="checkbox"/> Yes	<b>Not to Exceed</b>	<span style="background-color: black; color: red;">(b)(4)</span>
<b>Schedule Impact</b>	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes	<b>No. of Days</b>	<u>0</u>
<b>Project Manager</b>	<span style="background-color: black; color: red;">(b)(6)</span>	<b>Date</b>	<u>30 September 2014</u>

**Evaluation:**

Approved by (b)(6) Differing Site Conditions; Field Fit

<b>NASA Project Manager</b>	(b)(6)	<b>Date</b>	<u>10/1/14</u>
<b>Construction Engineer</b>		<b>Date</b>	<u>10/1/14</u>
<b>Quality Engineer</b>		<b>Date</b>	<u>10/1/14</u>
<b>Safety Engineer</b>		<b>Date</b>	<u>10-1-14</u>
<b>Environmental</b>		<b>Date</b>	<u>10/1/14</u>
<b>Design Engineer</b>		<b>Date</b>	<u>10/1/14</u>
<b>CGB Chair</b>	<u>William A. Snyder</u>	<b>Date</b>	<u>10/1/14</u>

<b>CGB Approved for Implementation</b>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
<b>COTR</b>		<b>Date</b> <u>10/1/14</u>
<b>Contracting Officer</b>		<b>Date</b>

Page 38 redacted for the following reason:

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(b)(7)(F)

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE

PAGE OF PAGES

1

2

2. AMENDMENT/MODIFICATION NO.

000009

3. EFFECTIVE DATE

See Block 16C

4. REQUISITION/PURCHASE REQ. NO.

5. PROJECT NO. (If applicable)  
N/A

6. ISSUED BY

CODE

SSC

7. ADMINISTERED BY (If other than Item 6)

CODE

NASA/Stennis Space Center  
Office of Procurement  
Building 1100 Room 251H  
Stennis Space Center MS 39529-6000

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

SAUER SOUTHEAST  
11223 PHILLIPS PARKWAY DR  
JACKSONVILLE FL 32256-1574

9A. AMENDMENT OF SOLICITATION NO.

9B. DATED (SEE ITEM 11)

10A. MODIFICATION OF CONTRACT/ORDER NO.

NNS12AA83B

NNS12AA95T

10B. DATED (SEE ITEM 13)

08/03/2012

CODE ODX52

FACILITY CODE

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 extended.  
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)

Net Decrease:

-\$4,000.00

See Schedule

13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

CHECK ONE	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).
X	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF: FAR 52.243-4, CHANGES
	D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor  is not.  is required to sign this document and return 1 copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

POTABLE WATER SYSTEM UPGRADES

- The purpose of this Modification is to reduce the available safety incentive as a result of a safety mishap that occurred on October 31, 2014 on Task Order NNS12AA95T.
  - A subcontractor was operating a mini excavator attempting to dig a trench and struck a buried natural gas line. The damage occurred as a result of the subcontractor failing to follow basic excavation requirements to positively identify and or hand excavate within six feet of a known or suspected subsurface utility. The aforementioned safety mishaps warrants a reduction of (\$4,000.00) of the available safety incentive. Therefore the available safety incentive is hereby reduced from \$18,000.00 to \$14,000.00.
  - The Task Order completion date remains unchanged at Dec 1, 2014.
  - As a result of the change identified, the total contract value is hereby changed from:
- Continued ...

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

15A. NAME AND TITLE OF SIGNER (Type or print)

(b)(6)

Attorney in Fact

16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)

Jason Edge

15C. DATE SIGNED

11/24/14

16B. UNITED STATES OF AMERICA

(Signature of Contracting Officer)

16C. DATE SIGNED

24 Nov 14

(b)(6)

STANDARD FORM 30 (REV. 10-83)  
Prescribed by GSA  
FAR (48 CFR) 53.243

**CONTINUATION SHEET**

REFERENCE NO. OF DOCUMENT BEING CONTINUED  
 NNS12AA83B/NNS12AA95T/000009

PAGE 2 OF 2

NAME OF OFFEROR OR CONTRACTOR  
 SAUER SOUTHEAST

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	<p>\$5,304,616.45 to read: \$5,300,616.45, a net decrease of \$4,000.00</p> <p>5. All other terms and conditions remain unchanged.</p> <p>6. In consideration of the modification agreed to herein as complete equitable adjustments, Sauer, Inc. hereby releases the Government from any and all liability under this contract for further equitable adjustments attributable to the above change and the Government's acceptance of the same such facts or circumstances giving rise to this modification except for: (NONE).</p> <p>LIST OF CHANGES:                      Reason for Modification : Change Order                      Total Amount for this Modification: -\$4,000.00                      New Total Amount for this Version: \$5,300,616.45                      New Total Amount for this Award: \$5,300,616.45                      Obligated Amount for this Modification: -\$4,000.00                      New Total Obligated Amount for this Award: \$5,300,616.45</p> <p>CHANGES FOR LINE ITEM NUMBER: 1                      Total Amount changed from \$5,304,616.45 to \$5,300,616.45                      Obligated Amount for this modification: -\$4,000.00</p> <p>NEW DELIVERY LOCATION RECORD:                      Quantity: 0                      Amount: \$5,300,616.45                      Delivery date: 12/01/2014                      Shipping Address:</p> <p>Mark For Address:</p> <p>CHANGES FOR ACCOUNTING CODE:                      64RA10/6100.3200/64/FC000000/818734.09.01.01/000/3200/64/CECX62012D/769Z/8012/170130/1/2                      Amount changed from \$6,171.00 to \$2,171.00                      Percent changed from .11647 to .04093</p> <p>Payment Terms:                      Net 14 days                      FOB: Destination</p>				

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT 1. CONTRACT ID CODE PAGE OF PAGES  
 1 2

2. AMENDMENT/MODIFICATION NO. 3. EFFECTIVE DATE 4. REQUISITION/PURCHASE REQ. NO. 5. PROJECT NO. (If applicable)  
 000010 See Block 16C N/A

6. ISSUED BY CODE SSC 7. ADMINISTERED BY (If other than Item 9) CODE  
 NASA/Stennis Space Center  
 Office of Procurement  
 Building 1100 Room 251H  
 Stennis Space Center MS 39529-6000

8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code) 9A. AMENDMENT OF SOLICITATION NO.  
 SAUER SOUTHEAST (x)  
 11223 PHILLIPS PARKWAY DR  
 JACKSONVILLE FL 32256-1574 9B. DATED (SEE ITEM 11)

10A. MODIFICATION OF CONTRACT/ORDER NO. 10B. DATED (SEE ITEM 13)  
 NNS12AA83B  
 NNS12AA95T  
 CODE ODX52 FACILITY CODE 08/03/2012

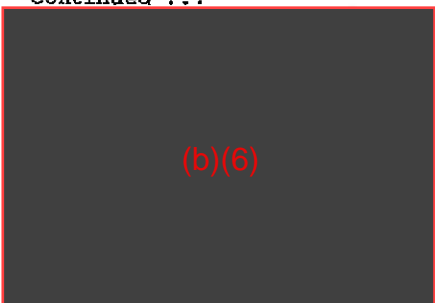
11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS  
 The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers  is extended.  is not extended.  
 Offers must acknowledge receipt of this amendment prior to the hour and date specified 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) Net Decrease: -\$10,000.00  
 See Schedule

13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.  
 CHECK ONE  
 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 data, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).  
 X C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF FAR 52.243-4, CHANGES  
 D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor  is not.  is required to sign this document and return 1 copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)  
 POTABLE WATER SYSTEM UPGRADES  
 1. The purpose of this Modification is to extend the Task Order completion date (30) calendar days for a credit of (\$10,000.00).  
 2. Due to unresolved tracer wire issues, the Task Order completion date is hereby extended (30) calendar days to allow the contractor time to resolve the issues. In consideration for the extension, the task order amount will be reduced (\$10,000.00). The new task order completion date is now Dec 31, 2014.  
 3. As a result of the extension, the total Task Order amount is hereby changed from: \$5,300,616.45 to read: \$5,290,616.45, a net decrease of (\$10,000.00).  
 4. All other terms and conditions remain unchanged.  
 Continued ...



document referenced in Item 9 A or 10A, as heretofore changed, remain unchanged and in full force and effect.  
 resident 15A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)  
 Jason Edge  
 15C. DATE SIGNED 15B. UNITED STATES OF AMERICA 16C. DATE SIGNED  
 11-25-14 (Signature of Contracting Officer) 25 NOV 14

**CONTINUATION SHEET**

REFERENCE NO. OF DOCUMENT BEING CONTINUED  
 NNS12AA83B/NNS12AA95T/000010

PAGE OF  
 2 2

NAME OF OFFEROR OR CONTRACTOR  
 SAUER SOUTHEAST

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	<p>5. In consideration of the modification agreed to herein as complete equitable adjustments, Sauer, Inc. hereby releases the Government from any and all liability under this contract for further equitable adjustments attributable to the above change and the Government's acceptance of the same such facts or circumstances giving rise to this modification except for: (NONE).</p> <p>LIST OF CHANGES:                      Reason for Modification : Change Order                      Total Amount for this Modification: -\$10,000.00                      New Total Amount for this Version: \$5,290,616.45                      New Total Amount for this Award: \$5,290,616.45                      Obligated Amount for this Modification:                      -\$10,000.00                      New Total Obligated Amount for this Award:                      \$5,290,616.45</p> <p>CHANGES FOR LINE ITEM NUMBER: 1                      Total Amount changed                      from \$5,300,616.45 to \$5,290,616.45                      Obligated Amount for this modification:                      -\$10,000.00</p> <p>NEW DELIVERY LOCATION RECORD:                      Quantity: 0                      Amount: \$5,290,616.45                      Delivery date: 12/01/2014                      Shipping Address:                       Mark For Address:</p> <p>CHANGES FOR ACCOUNTING CODE:                      64RA10/6100.3200/FC000000/818734.09.01.01/000/3200                      /64/CECX62012D/769Z/8012/170130                      Amount changed from \$25,000.00 to \$15,000.00                      Percent changed from .47407 to .28352</p> <p>Payment Terms:                      Net 14 days                      FOB: Destination</p>				



## **IMPORTANT INFORMATION**

### Indefinite Delivery Indefinite Quantity Multiple Award Construction Contract (MACC) Request for Proposal NNS12426790R STENNIS SPACE CENTER

This Stennis Space Center (SSC) construction project will be awarded using the form of a Best Value Request for Proposal (RFP) instead of the standard NASA Invitation for Bids. **This solicitation shall utilize full and open competition, SSC anticipates awarding no more than (10) IDIQ contracts.**

As general information to construction contractors not familiar with SSC solicitations, the solicitation package consists of two parts. **PART 1:** Consists of the specifications and drawings. The specifications and the drawings are on this CD- ROM. **PART 2:** Consists of the (RFP) package with its attachments. The RFP **can only** be obtained through the Internet at: <http://procurement.nasa.gov/cgi-bin/EPS/bizops.cgi?gr=D&pin=64> This will display all current open solicitations on SSC. Scroll down until you see "Indefinite Delivery Indefinite Quantity MACC", click on solicitation package and then print. Also, any and **ALL** amendments will be issued on this web site as well. It is the offerors responsibility to check this site daily for any changes to the solicitation.

All contractors are encouraged to read the entire RFP and follow the instructions for what to submit. Section L of the RFP list **ALL** the information that is required to be submitted with your proposal. If you have questions you may email them to [Jason.f.edge@nasa.gov](mailto:Jason.f.edge@nasa.gov)

**Contractors are no longer required to submit a hard copy of their representations and certifications. In accordance with FAR 4.1201, prospective contractors shall complete electronic annual Representations and Certifications via the Business Partner Network (BPN) website at <http://orca.bpn.gov>. Contractors should update the representations and certifications as necessary, but at least annually to ensure they are kept current, accurate and complete.**

All offerors MUST register in the Department of Defense (DoD) Central Contractor Registration (CCR) System in accordance with FAR clause 52.204-7 which requires that all prospective contractors be registered in CCR prior to award of any contract. The vendor is solely responsible for self-registering in the CCR database, creating a trading partner profile (TPP) and updating their company information annually. The preferred and most expedient method for vendor registration is by registering electronically through the following website address: <http://www.ccr.gov>. Complete and accurate electronic registrations are processed within 48 hours. Vendors can call 888-227-2423 from 7:30 a.m. to 5:30 p.m. EST Monday through Friday for registration questions or assistance, or to obtain a registration form and instructions. Registration of an applicant submitting an application through a method other than the Internet may take up to 30 days.

In accordance with FAR 52.222-37, all contractors are required to submit the form entitled "Federal Contractor Veterans' Employment Report VETS-100" to the Dept of Labor no later than Sep 30 of each year. The Contractor shall include the terms of this clause in every subcontract or purchase order of \$25,000 or more unless exempted by rules, regulations, or orders of the Secretary. **Contracting Officers are prohibited from obligating or expending appropriated funds to enter into contracts with a contractor that does not meet the Veterans' Employment reporting requirements (VETS-100Report).** You may direct any Questions regarding your compliance with this report by calling 703-461-2460. You may register online at: <http://www.dol.gov/vets/programs/fcp/main.htm>

We would like to draw your attention to FAR clause 52.223-9 Entitled, "Estimate of Percentage of Recovered Material Content for EPA Designated Products." This **mandatory** clause requires the successful contractor, upon completion of this contract, to estimate the percentage of the total recovered material used in contract performance, including, if applicable, the percentage of post consumer material content. The report shall be forwarded to the Procurement address identified in the clause.