

## **Appendix B**

### **Technical Specifications for Waste Area Group 5, Remedial Design/Remedial Action, Operable Unit 5-12, Phase II Sites**

# **A-E CONSTRUCTION SPECIFICATION**

SUBCONTRACT NO. TBD  
PROJECT FILE NO. 020911

## **Waste Area Group 5 Remedial Design/Remedial Action – Phase II**

**APPROVED FOR CONSTRUCTION**

Prepared for:  
U.S. Department of Energy  
Idaho Operations Office  
Idaho Falls, Idaho

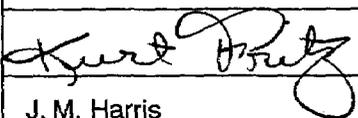
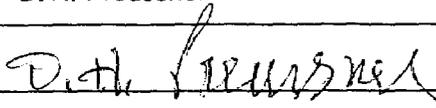
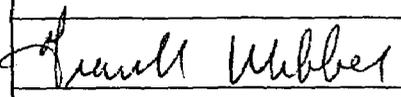
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Idaho National Engineering & Environmental Laboratory  
BECHTEL BWXT IDAHO, LLC

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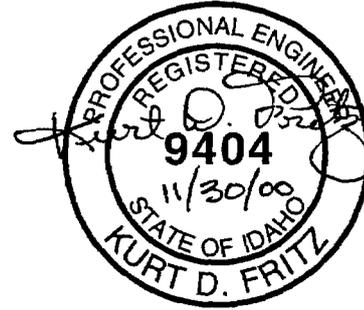
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## Waste Area Group 5 Remedial Design/Remedial Action - Phase II

The following Sections of this Specification were prepared under the direction of the Professional Engineer as indicated by the seal and signature provided on this page. The Professional Engineer is registered in the State of Idaho to practice Civil Engineering. General Conditions and Special Conditions referenced herein will be provided to the Subcontractor



### Division 1 -- General Requirements

- 01005 -- Summary of Work
- 01051 -- Construction Surveying and Staking
- 01300 -- Submittals

### Division 2 -- Site Work

- 02200 -- Earthwork
- 02486 -- Revegetation

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Project Title: **Waste Area Group 5 Remedial Design/Remedial Action - Phase II**  
Document Type: **Construction Specifications** Project Number: 020911  
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1 SECTION 01005--SUMMARY OF WORK

2  
3 PART 1--GENERAL

4  
5 SUMMARY:

6  
7 The Subcontractor shall furnish labor, material, equipment, and supplies; and perform work  
8 and operations necessary to perform the OU 5-12 Phase II remedial action completely, in  
9 accordance with the subcontract drawings and these specifications.

10  
11 All soil removal areas shall be clearly marked by the Subcontractor prior to start of work  
12 using coordinates as shown on the drawings.

13  
14 The marked areas will identify the radionuclide contaminated surface soil that requires  
15 excavation. Prior to excavation, the vegetation that covers the areas shall be mowed.  
16 Vegetation and contaminated soil shall be transported to an onsite disposal facility as  
17 indicated in the Special Conditions. The Subcontractor shall remove the soil in 3 inch or 6  
18 inch lifts as shown on the drawings. Upon completion of the excavation, the area will be  
19 surveyed by the contractor to determine if contaminants are still present. If the cleanup level  
20 is not obtained, then the contaminated area will be marked by the Contractor and an  
21 additional cut will be taken. This will be done until the area meets or exceeds the cleanup  
22 goals or until basalt has been reached. No basalt outcroppings will be removed during this  
23 removal action.

24  
25 The excavated soil shall be loaded into the transport vehicles and covered to prevent the loss  
26 of any material during transport. After covering, each vehicle shall be visually inspected by  
27 the Job Site Supervisor (JSS), and the Radiological Control Technician (RCT) will perform a  
28 radiological survey to ensure that the load is securely contained prior to leaving the area.  
29 Surveys may take as little as 15 minutes for each vehicle. However, if excess radiation is  
30 detected, the survey may take over an hour and the Subcontractor shall be responsible for  
31 removing any contamination found prior to leaving the area. The same radiological survey  
32 sequence shall take place prior to leaving the disposal site. All radiological surveying shall  
33 be in accordance with PRD-183; MCP-139; and MCP-425.

34  
35 Once excavation activities are completed in a work area and verification surveys and samples  
36 of the area are complete, the Subcontractor shall decontaminate equipment and move to the  
37 next work area. Verification samples will be collected by the Contractor to verify that the  
38 excavation area meets the cleanup goals. Site closure will be initiated upon notification that  
39 the excavation area has obtained compliance with remedial action goals.

40  
41 Site close out includes, regrading and revegetating disturbed areas. Backfilling will be  
42 required in some excavations exceeding 1 foot in depth as directed by the Contractor's  
43 Representative.

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1 REFERENCES:

2  
3 The following documents, including others referenced therein, form part of this Section to the  
4 extent designated herein.  
5

6 CODE OF FEDERAL REGULATIONS (CFR)

7 29 CFR 1910 OSHA General Industry Safety Standards  
8 29 CFR 1926 OSHA Construction Industry Safety Standards  
9

10 BECHTEL BWXI IDAHO, LLC (BBWD)

11 Subcontractor Requirements Manual (SRM)  
12 PRD-183 INEEL Radiological Control Manual, Manual 15A  
13 MCP-139 Radiological Surveys  
14 MCP-425 Radiological Release Surveys, and the Disposition of Contaminated  
15 Materials  
16

17 Unless otherwise specified, references in these specifications or on the subcontract drawings  
18 to other specifications, codes, standards or manuals which are part of these specifications, but  
19 not included herein, shall be the latest edition, including any amendments and revisions, in  
20 effect as of the date of this Specification.  
21

22 SUBMITTALS:

23  
24 Submittals include, but are not limited to the following:  
25

26 Hazardous Chemicals and Substances: Subcontractor shall submit a list of hazardous  
27 chemicals and substances in accordance with General Conditions Article 13 for mandatory  
28 approval. Chemicals and substances not previously approved for use will require the  
29 submittal of MSDS for mandatory approval.  
30

31 QUALITY ASSURANCE:

32  
33 Quality Assurance Program requirements shall exist to assure that work performed is in  
34 conformance with the requirements established by the drawings and this specification. QA  
35 Program criteria applicable to this scope of work is addressed in SC-10 of the Special  
36 Conditions and these specifications.  
37

38 SAFETY, HEALTH AND ENVIRONMENT:

39  
40 In general work shall be in compliance with the applicable sections of 29 CFR 1910, 29 CFR  
41 1926 and the Subcontractor Requirements Manual Sections 1 through 4, and General  
42 Conditions Article 21.  
43

44 END OF SECTION 01005

Project Title: **Waste Area Group 5 Remedial Design/Remedial Action - Phase II**  
Document Type: **Construction Specifications** Project Number: 020911  
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1 SECTION 01051--CONSTRUCTION SURVEYING AND STAKING

2  
3 PART 1--GENERAL

4  
5 SUMMARY:

6  
7 Section Includes: Work includes, but is not limited to:

8  
9 The Subcontractor shall furnish all materials, labor, tools and equipment to perform all  
10 surveying necessary to lay out and control the construction work. The Subcontractor shall  
11 perform surveying to establish the excavation boundaries as set forth in these specifications  
12 and the design drawings.

13  
14 The Contractor will provide survey coordinates for the first cut excavation boundary as  
15 shown on the drawings. The Subcontractor shall survey and mark the excavation boundary  
16 prior to commencement of excavation.

17  
18 SUBMITTALS:

19  
20 Submittals include but are not limited to the following:

21  
22 Certification: Submit certification that the land surveyor is a registered professional in the  
23 State of Idaho.

24  
25 QUALITY CONTROL:

26  
27 Qualifications: Construction surveying and staking shall be accomplished under the direction  
28 of a registered professional land surveyor.

29  
30 PART 2--PRODUCTS

31  
32 Stakes: Identification stakes and hubs shall be of sufficient length, width and depth to  
33 provide a solid set in the ground and to provide space for marking above ground when  
34 applicable. The top 2-in. of all stakes shall be painted or marked with plastic flagging.

35  
36 PART 3--EXECUTION

37  
38 SURVEY REQUIREMENT:

39  
40 Control: Use existing control as required. The coordinates of the existing controls will be  
41 provided by the Contractor. Prior to commencement of construction work, the Subcontractor  
42 shall establish survey control inside the work area.

43  
44 Survey control points shall be established so that any point within the job site can be  
45 reestablished and elevations can be obtained to the required tolerances at any time during the

1 construction. The Subcontractor shall verify all base line, and vertical control benchmarks  
 2 stipulated in the information provided by the Contractor.

3  
 4 Excavation Limit Reference Stakes: Excavation limit stakes shall be established. The  
 5 position of these stakes shall be determined by methods that will produce precision level C  
 6 shown in the Table 1.

7  
 8 The clearing limit shall be located on the ground and marked with lath, flagging, or other  
 9 methods approved by the Contractor's Representative.

10  
 11 Monuments, Poles, Signs, and other Existing Items: The following items shall be left in place  
 12 and not be disturbed.

- 13 SI-1 Burial Ground fencing, monuments, and engineered barrier
- 14 Institutional control signs
- 15 Power poles
- 16 Monitoring wells
- 17 Abandoned piping outside excavation boundary or below excavation depth.
- 18 Survey control points
- 19 Borehole markers

20

**TABLE 1. REFERENCE STAKES AND CLEARING LIMITS PRECISION**

Item	Precision		
	A	B	C
Horizontal accuracy for clearing limits. In feet or percentage of horizontal distance measured from transverse line, whichever is greater.	.05 ft or 0.2%	0.15 ft or 0.6%	0.2 ft or 1.0%

21

22 METHOD OF MEASUREMENT:

23

24 Surveying: Surveying will not be measured.

25

26 BASIS OF PAYMENT:

27

28 Surveying: Payment for surveying shall be included in the contract lump sum price.

29

30 FIELD QUALITY CONTROL:

31

32 Surveillance will be performed by the Contractor's Representative to verify compliance of the  
 33 work to the drawings and specifications.

34

35 END OF SECTION 01051

Project Title: **Waste Area Group 5 Remedial Design/Remedial Action Phase II**  
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1 SECTION 01300--SUBMITTALS

2  
3 PART 1--GENERAL

4  
5 SUMMARY:

6  
7 This section specifies the administrative, technical and quality requirements for Vendor Data  
8 submittals. Vendor Data requirements are identified in individual specification sections and  
9 tabularized on a Vendor Data Schedule. In the event of conflicting requirements, the  
10 submittal requirements prescribed in the individual specification section shall prevail.

11  
12 The Subcontractor shall submit data, drawings, and other submittals specified. If the  
13 Contractor determines the Subcontractor's submittal to be incomplete or unacceptable, the  
14 Subcontractor shall make a complete and acceptable submittal to the Contractor by the  
15 second submission of a submittal item.

16  
17 The Subcontractor shall be responsible for advising the Contractor of any submittal that may  
18 be delayed and which might, if further delayed, extend completion of the project.

19  
20 Section Includes: Work includes, but is not limited to: The preparation, transmittal and  
21 delivery of documents by the Subcontractor to the Contractor as required in the "Submittals"  
22 subdivision of the specification section and as provided on the Vendor Data Schedule.

23  
24 Related Sections: General Conditions, Special Conditions, Drawings and Vendor Data  
25 Schedule and other sections of these specifications apply to this section.

26  
27 REFERENCES:

28  
29 The following documents, including others referenced therein, form part of this Section to the  
30 extent designated herein.

31  
32 **AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)**

33  
34 **ANSI Y14.1 Drawing Sheet Size and Format**

35  
36 SUBMITTALS:

37  
38 General Procedures:

39  
40 Vendor data, whether prepared by the Subcontractor or Subcontractor's subtier or supplier,  
41 shall be submitted as instruments of the Subcontractor. Therefore, prior to submittal, the  
42 subcontractor shall ascertain that material and equipment covered by the submittal and the  
43 contents of the submittal itself, meet all the requirements of the subcontract specifications,  
44 drawings, or other contract documents.

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1 Each submittal shall contain identification for each separable and separate piece of material  
2 or equipment, and literature with respect to the information provided in the specification and  
3 on the Vendor Data Schedule. Submittals shall be numbered consecutively for each different  
4 submittal.

5  
6 Vendor Data Schedule:

7  
8 Vendor Data required by the specification sections to support construction and operation of  
9 the project is identified on a Vendor Data Schedule. The Vendor Data schedule is an  
10 attachment to the Specification. The Vendor Data Schedule provides a tabular listing by item  
11 number, drawing or specification reference, and description of the item or service. The type  
12 of submittal is identified by a vendor data code which is preceded by the number of copies to  
13 be included with the submittal. Routine submittals will require 6 copies for Mandatory  
14 Approval and 4 copies for Information Only. The time required to submit the item is  
15 identified by a "When to Submit" code. An "Approval" code specifies whether the submittal  
16 is for Mandatory Approval or for Information Only. A column is included to indicate if  
17 receiving inspection is required.

18  
19 Or Equal Material or Equipment Submittals:

20  
21 All "or equal" materials, equipment or systems shall be identified and submitted for approval  
22 as required by the General Conditions.

23  
24 An "or equal" submittal shall contain as a minimum all operating and physical parameters  
25 necessary to show that the material or equipment is equivalent to the specified material or  
26 equipment. All parameters shall be specifically identified by the submitter in the proposal.  
27 Exceptions or differences between the specified item and the "or equal" item shall also be  
28 identified.

29  
30 If an "or equal" material, equipment or system is approved, the Subcontractor shall be  
31 responsible to provide backup material necessary to include the material, equipment or  
32 system in the technical documents.

33  
34 Construction Vendor Data Transmittal and Disposition Form:

35  
36 All vendor data shall be submitted to the Contractor using the Construction Vendor Data  
37 Transmittal and Disposition Form. The form provides the Subcontractor a convenient  
38 method to submit vendor data and provides the Contractor a means of dispositioning the  
39 submittal. The Subcontractor shall list the Vendor Data Schedule item number, drawing or  
40 specification number, submittal status (e.g. Information Only, Re-submittal, or Or-equal  
41 submittal by placing the quantity enclosed in the space) and the item description.

1 Disposition by the Contractor

2  
3 The Contractor's comments and required action by the Subcontractor will be indicated by a  
4 disposition code on the submittal. The disposition codes will be classed as follows:

5  
6 (A) "Work May Proceed." Submittals so noted will generally be classed as data that  
7 appears to be satisfactory without corrections.

8  
9 (B) "Work May Proceed Subject to Incorporation of Comments." This category will  
10 cover data which, with the correction of comments noted or marked on the  
11 submittal, appear to be satisfactory and require no further review by the  
12 Contractor prior to construction. Revised drawings shall be provided upon  
13 request.

14  
15 (C) "Work May NOT Proceed. Revise and Resubmit." Submittals so dispositioned  
16 will require a corrected resubmittal for one of the following reasons.

- 17  
18 1) Submittal requires corrections, per comments, prior to final review.  
19 2) Submittal data incomplete and requires more detailed information prior to  
20 final review.  
21 3) Submitted data does not meet specification requirements.

22  
23 (D) "Received for Information Only." Submittal so dispositioned will generally be  
24 classified as Information Only for as-specified material and equipment.

25  
26 Mandatory Approval code vendor data will be reviewed by the Contractor and receive an A,  
27 B, or C disposition. Information Only submittals will receive a D disposition. A, B, and C  
28 coded dispositioned submittals will be returned to the Subcontractor. D dispositioned  
29 submittals will not be returned to the Subcontractor. The Contractor may provide internal  
30 review of Information Only submittals. In the event that comments are generated on an  
31 Information Only submittal, the submittal may be re-dispositioned B or C code and returned  
32 to the Subcontractor for appropriate action. Acknowledgment of receipt of dispositioned  
33 vendor data by the subcontractor will not be required.

34  
35 The Contractor will return dispositioned submittals with reasonable promptness.  
36 Subcontractor shall note that a prompt review is dependent on timely and complete  
37 submittals in strict accordance with these instructions.

38  
39 END OF SECTION 01300

Project Title: **Waste Area Group 5 Remedial Design/Remedial Action - Phase II**  
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1 SECTION 02200--EARTHWORK

2  
3 PART 1--GENERAL

4  
5 SUMMARY:

6  
7 Section Includes: Work includes, but is not limited to:

8  
9 Clearing vegetation as required.

10 Excavating all materials encountered, of every description, for completion of the project  
11 as shown on the drawings and as specified herein.

12 Dust control.

13 Delivery of all contaminated material excavated for completion of the project to an onsite  
14 disposal facility as indicated in the Special Conditions.

15 Backfilling of all excavations as specified herein.

16 Compacting of all backfill as specified herein.

17 Finish grading and grading for surface drainage or revegetation.

18  
19 REFERENCES:

20  
21 The following documents, including others referenced therein, form part of this Section to the  
22 extent designated herein.

23  
24 **AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION**  
25 **OFFICIALS (AASHTO)**

26  
27 **AASHTO M145** Classification of Soils and Soil-Aggregate Mixtures for Highway  
28 Construction Purposes

29  
30 **CODE OF FEDERAL REGULATIONS**

31  
32 **29 CFR 1926** OSHA General Industry Safety Standards, Subpart P

33  
34 **BECHTEL BWXT IDAHO, LLC (BBWI)**

35  
36 **Health and Safety Plan (HASP) for the Remedial Action of Waste Area Group 5,**  
37 **Operable Unit 5-12**

38  
39 SUBMITTALS:

40  
41 Submittals include but are not limited to the following:

1 Construction Work Plan: The Subcontractor shall submit an excavation plan detailing the  
2 methods and equipment for clearing vegetation, excavation, basalt cleaning and dust control.  
3 The construction work plan shall also address minimization of cross contamination and over-  
4 excavation minimization strategies.

5  
6 PART 2--PRODUCTS

7 MATERIALS AND EQUIPMENT:

8  
9 Satisfactory Soil Materials: Satisfactory soil materials are defined as those complying with  
10 AASHTO M145, soil classification Groups A-1, A-2-4, A-2-5, and A-3.

11  
12 Unsatisfactory Soil Materials: Unsatisfactory soil materials are those defined in  
13 AASHTO M145 soil classification Groups A-2-6, A-2-7, A-4, A-5, A-6, and A-7; also peat  
14 and other highly organic soils.

15  
16 Backfill and Fill Material: "Satisfactory" soil materials free of clay, rock, gravel larger than  
17 3 in. in any dimension, debris, waste, frozen materials, vegetable and other deleterious  
18 matter. Gravel pit material and use of the gravel pits shall be at no cost to the Subcontractor.  
19 Upon completion of operations involving fill material removal, the Subcontractor shall grade  
20 and reshape the disturbed areas. Sloped surfaces shall meet the requirements of OSHA 29  
21 CFR 1926.

22  
23 Equipment: All equipment and tools used by the Subcontractor to perform the work shall be  
24 subject to inspection by the Contractor before the work is started and shall be maintained in  
25 satisfactory working conditions at all times. The Subcontractor's equipment shall have the  
26 capability to perform the indicated work specified here in.

27  
28 Due to the potential for contamination, all equipment brought to the site slated for work in  
29 the contamination zone shall be identified to the Contractor prior to delivery and shall be  
30 clean and free of grease and oil spots where applicable, tires will be in a like-new condition,  
31 free of slits, and cracks. The Contractor reserves the right to reject equipment not meeting  
32 these standards.

33  
34 The Subcontractor shall ensure that all equipment used for clearing vegetation or earthwork is  
35 fitted with appropriate safety devices that comply with all applicable Federal laws and the  
36 Health and Safety Plan (HASP) for Waste Area Group 5 Remedial Design/Remedial Action -  
37 Phase II, and adequately protect the operator and minimize exposure of workers and others to  
38 potentially contaminated material.

39  
40 PART 3--EXECUTION

41  
42 The Subcontractor shall be responsible for determining the method of excavation to be used  
43 for each of the areas identified on the drawings. The excavation method shall be submitted  
44 for Contractor approval. It is recommended that most of the mass excavation be

1 accomplished using an all-wheel drive motor grader for windrowing the soils to minimize the  
2 spread of contamination. Hand excavation may be required around site features such as  
3 fences, power poles, trees, etc. and where localized contamination does not require the use of  
4 mechanized excavation equipment.

5  
6 The Subcontractor shall locate and mark existing monuments, monitoring wells, protection  
7 posts, and markers before construction operations commence and protect such items during  
8 construction. The Subcontractor shall restore or replace damaged items to original condition  
9 as required by the Contractor.

10  
11 The Subcontractor shall keep all roads and parking areas adjacent to and included in this  
12 project usable at all times; this shall include maintaining dirt haul roads and access roads at  
13 the project site, INEEL site and borrow areas used under this contract. Sections of the haul  
14 route to the ICDF are over deteriorating asphalt roads. The Subcontractor shall provide all  
15 necessary barricades, temporary walkways, lights, signs, signals, etc., for the protection of the  
16 workers and the public as per the Occupational Safety and Health Administration (OSHA),  
17 Construction Safety and Health Regulation 29 CFR, Part 1926, Subpart G, Signs, Signals,  
18 and Barricades.

19  
20 The Subcontractor shall clearly mark and post all laydown areas.

21  
22 DUST CONTROL:

23  
24 The Subcontractor shall minimize the creation and emission of dust per IDAPA Standards  
25 16.01.01.650 and 16.01.01.651 during all work activities performed under this contract. This  
26 shall be accomplished by the use of water trucks and visual observation. Water based dust  
27 control additives may be used with the approval of the Contractor. The Subcontractor shall  
28 control the amount of water used so as not to create flowing water. Source of water for dust  
29 suppression will be specified in the Special Conditions.

30  
31 The Subcontractor shall contain and cover excavated soil during transport to the ICDF or  
32 other INEEL disposal facility. The selected covering method shall be evaluated and  
33 approved by the Contractor and RCT prior to initial use.

34  
35 CLEARING SURFACE VEGETATION:

36  
37 This work shall consist of mowing and disposing of all weeds, grass, brush, shrubs, and logs  
38 from all the excavation boundaries shown on the drawings for areas ARA-01, ARA-12, and  
39 ARA-23, in accordance with these specifications. Mowed vegetation shall be removed and  
40 disposed of with the contaminated soil excavation. Mowing shall remove vegetation to as  
41 close to the ground surface as practicable. The limits of clearing shall be the excavation  
42 boundaries shown on the design drawings and as staked by the Subcontractor.

43

1 Trees shown on the design drawings shall be protected during excavation. Trees or shrubs to  
2 be retained, which have been cut or scarred, shall be painted with an asphaltum base paint  
3 prepared especially for tree surgery.  
4

5 Any areas outside the designated excavation areas which are damaged or disturbed by the  
6 Subcontractor's operations shall be revegetated by the Subcontractor at no cost to the  
7 Contractor. Revegetation shall be in accordance with Section 02486 of these specifications.  
8  
9

10 **EXCAVATION:**

11  
12 **Description:** This work shall consist of authorized excavation of contaminated soils and  
13 hauling of these contaminated soils to an onsite disposal facility as indicated in the Special  
14 Conditions.  
15

16 **Pre-Operational Test:** Prior to initiating soil removal activities, the Subcontractor will  
17 prepare and transport a load of clean soil obtained from the BORAX gravel pit. The transport  
18 vehicle must have a covering in place and a seal around the tailgate that will be used during  
19 the removal action to protect the vehicle and the environment from being contaminated by  
20 the excavated soils. The test load will be transported from the BORAX gravel pit to the ARA  
21 area at a maximum speed of 55 miles per hour (or lesser speed if proposed by the  
22 Subcontractor as a maximum hauling speed). The load will then be unloaded as if it were  
23 contaminated soil. During the test run, the Contractor, RCT, and Environmental Safety and  
24 Health (ES&H) representative will visually evaluate the operation to determine if any soil is  
25 released. If it is determined that the covering does not adequately contain the soil during  
26 transport, modifications shall be made and the test repeated.  
27

28 **General Soil Excavation Requirements:** In all excavation locations shown on the drawings,  
29 the Subcontractor shall contain excavation operations within the designated limits. If  
30 conditions encountered warrant modification to the designated limits, the Contractor shall be  
31 notified prior to work proceeding.  
32

33 The subcontractor shall mark or otherwise indicate the location of items to be protected as  
34 stated in this specification, and protect these existing structures during construction activities.  
35

36 Excavations that expose basalt outcroppings are likely and in such cases, the Subcontractor  
37 will notify the Contractor. Manual cleaning such as brooming or vacuuming the basalt  
38 outcropping may be required.  
39

40 **Items to be Protected:** Trees shown on the design drawings shall be protected during  
41 excavation. If the contaminated soil surrounding a tree cannot be removed, the Subcontractor  
42 may remove the tree with permission of the Contractor's Representative.  
43

1 The Subcontractor shall protect all bore hole markers, institutional control signs, power  
2 poles, monitoring wells, and survey control points shown on the design drawings.  
3 Abandoned piping outside excavation boundary or below excavation depth shall also remain.  
4

5 The Subcontractor shall protect the permanent monuments, chain link fence, and the  
6 engineered barrier of the SL-1 burial grounds. If mechanical excavation is not feasible in this  
7 area, manual excavation methods shall be used.  
8

9 Unauthorized Excavation: Unauthorized excavation consists of removal of materials beyond  
10 indicated elevations or dimensions without specific direction by the Contractor.  
11 Unauthorized excavation shall be at the Subcontractor's expense.  
12

13 Stockpiling and Disposal: No overnight stockpiling of contaminated soil shall be allowed  
14 except for the soil removal inside the limits of the ARA I facility area shown on the  
15 drawings. Stockpiles inside ARA I shall be covered with 8-mil Visqueen, or similar approved  
16 material, to prevent erosion.  
17

18 Shoring and Bracing: The sides of all excavations shall be sloped or securely shored and  
19 braced in accordance with OSHA 29 CFR 1926, Subpart P.  
20

21 Control of Water: The Subcontractor shall furnish, install and operate the equipment  
22 required to keep surface water contained inside the contaminated soil boundary shown on the  
23 drawings by constructing temporary ditches, berms or other appropriate means of control.  
24 Water shall be allowed to infiltrate into the soil or used for dust suppression.  
25

26 Existing Utilities: There are existing utilities within the limits of the construction area. The  
27 utilities shall be identified by the Contractor and protected by the subcontractor. The  
28 Subcontractor shall immediately notify the Contractor should any utilities be discovered  
29 during construction activities that are not shown on the design drawings. Any utility such as  
30 risers, manholes, shut off valves, etc., uncovered that interferes with excavation activities,  
31 shall be removed to a depth sufficient to be below the finished grade. The object shall be  
32 surveyed by the Contractor's RCT, then disposed at the direction of the Contractor's  
33 Representative.  
34

35 First Cut Excavation: First cut excavation shall be defined as the initial excavation of a  
36 designated area (ARA-01, ARA-12, and ARA-23). Included in this activity is surveying of  
37 excavation boundaries, mobilization, excavation of soil, loading, transport to the disposal  
38 facility, incidental dust control, control of storm water, and demobilization. Excavation areas  
39 are shown in the drawings.  
40

41 Selective Excavation: Selective excavation shall be defined as any excavation from any area  
42 that has been previously excavated under this contract. This activity includes, but is not  
43 necessarily limited to mobilization, excavation of soil, loading, transport to the disposal  
44 facility, incidental dust control, control of storm water and demobilization. Excavations may

1 include mechanical and manual methods. Estimated quantities are shown in the subcontract  
2 documents.

3  
4 Site Locations:

5  
6 *ARA-01: ARA-I Chemical Evaporation Pond:*

7 This area is shown on drawing C-7. The contamination found in this area is Arsenic,  
8 Selenium, Thallium. The site contains a large basalt outcropping that covers approximately  
9 15% of the excavation area.

10  
11 The "first cut excavation" shall be 3 inches in depth or to basalt outcropping, whichever is  
12 the lesser depth. Upon completion of the "first cut excavation", analytical sampling shall be  
13 performed by the Contractor. The Subcontractor may mobilize to another excavation area  
14 during the time for sampling and analysis. If the analytical sampling results that indicate the  
15 remedial action goals have not been met, the Contractor will identify the boundaries of any  
16 remaining contamination. Identification of boundaries shall take approximately 2 working  
17 days. At the direction of the Contractor, the Subcontractor will re-enter the area and perform  
18 "selective excavation".

19  
20 *ARA-12: ARA-III Radioactive Waste Leach Pond:*

21 This area is shown on drawing C-8. The contamination found in this area is Silver-108m,  
22 Copper, Mercury, and Selenium. The site contains many large rocks (2 to 3 feet in diameter)  
23 that will be removed and disposed with the contaminated soil.

24  
25 The "first cut excavation" shall be 3 inches in depth or to basalt outcropping, whichever is  
26 the lesser depth. Upon completion of the "first cut excavation", analytical sampling shall be  
27 performed by the Contractor. The Subcontractor may mobilize to another excavation area  
28 during the time for sampling and analysis. If the analytical sampling results that indicate the  
29 remedial action goals have not been met, the Contractor will identify the boundaries of any  
30 remaining contamination. Screening and identification of boundaries shall take  
31 approximately 2 working days. At the direction of the Contractor, the Subcontractor will re-  
32 enter the area and perform "selective excavation".

33  
34 *ARA-23: Hot Spot Inside the SL-I Burial Ground:*

35 This area is shown on drawing C-3. The contamination found in this area is Cesium-137.  
36 The source of radiological contamination may be from the surface soils or from highly  
37 contaminated material below the surface.

38  
39 The "first cut excavation" shall be 6 inches in depth. A Contractor's RCT shall perform field  
40 screening to determine the remaining contaminated area. Screening shall take approximately  
41 1 day. Pending the results of the RCT's screening and at the direction of the Contractor, the  
42 Subcontractor shall backfill the excavation with clean soil or perform "selective excavation".  
43 The Subcontractor shall perform all work inside the SL-I Burial Ground fence line with small  
44 rubber-tired equipment or manual excavation.

1 *ARA-23: Haul Road Leading to SL-1 Burial Ground:*

2 This area is shown on drawing C-4. The contamination found in this area is Cesium-137.  
3 This contamination likely is a result of material falling off of objects as they were dragged to  
4 the SL-1 Burial Ground.

5  
6 The “first cut excavation” shall be 6 inches in depth. A Contractor’s RCT shall perform field  
7 screening to determine the remaining contamination. If the results of the RCT’s screening  
8 indicate remedial action goals have not been met, the Contractor will identify the boundaries  
9 of any remaining contamination. Screening and identification of boundaries shall take  
10 approximately 2 working days. The Subcontractor shall perform “selective excavation” at 3  
11 inch intervals or as directed by the Contractor until the Contractor’s RCT has determined the  
12 contamination is below remedial goals.

13  
14 *ARA-23: ARA-I Facility:*

15 This area is shown on drawing C-5. The contamination found in this area is Cesium-137.  
16 There is asphalt covering approximately 10% of the area. This contamination is likely very  
17 low and may be below the remedial action goals, but shall be excavated and stockpiled.

18  
19 The “first cut excavation” shall be 6 inches in depth. This soil shall be stockpiled within the  
20 limits of the ARA-I area. A Contractor’s RCT shall perform field screening of the soil  
21 stockpile. Pending the results of the screening, the soil may be deemed clean and used as  
22 backfill material or deemed contaminated and hauled to the disposal facility. A Contractor’s  
23 RCT shall perform field screening on the excavated area. Pending the results of the screening,  
24 the soil may be deemed clean and no further excavation is required or deemed contaminated  
25 and the Subcontractor shall perform “selective excavation” at 3 inch intervals or as directed  
26 by the Contractor until the Contractor’s RCT has determined the contamination is below  
27 remedial goals. The screening shall take approximately 2 working days. For estimating  
28 purposes, the Subcontractor shall assume the stockpiles from the 6 inch first cut excavation  
29 will be released by the RCT and be available for use as backfill material.

30  
31 *ARA-23: ARA-II Facility:*

32 This area is shown on drawing C-5. The contamination found in this area is Cesium-137.  
33 There is asphalt covering approximately 50% of the area. The contamination under the  
34 asphalt may be high. The existing reactor foundation is below excavation depth and shall  
35 remain in its original location.

36  
37 The “first cut excavation” shall be 6 inches in depth. A Contractor’s RCT shall perform field  
38 screening to determine the remaining contaminated area. Pending the results of the RCT’s  
39 screening, the Contractor will re-survey the area to identify the boundaries of any remaining  
40 contamination. Screening and identification of boundaries shall take approximately 2  
41 working days. The Subcontractor shall perform “selective excavation” at 3 inch intervals or  
42 as directed by the Contractor until the Contractor’s RCT has determined the contamination is  
43 below remedial goals.

44

1 *ARA-23: Soil Areas A and C:*

2 These areas are shown on drawings C-4 and C-6. The contamination found in this area is  
3 Cesium-137. These areas have been excavated approximately 3 inches during a 1999  
4 treatability study and the contaminated soil was stockpiled.

5  
6 In both areas, the Subcontractor shall completely remove the contaminated soil stockpiles. In  
7 Area C, the Subcontractor will remove 3 inches and 6 inches over the haul road area. Area A  
8 shall be excluded from a "first cut excavation" however, "selective excavation" may be  
9 required. A Contractor's RCT shall perform field screening to determine the remaining  
10 contaminated area. Pending the results of the RCT's screening, the Contractor will re-survey  
11 the area to identify the boundaries of any remaining contamination. Screening and surveying  
12 shall take approximately 2 working days. The Subcontractor shall perform further excavation  
13 at 3 inch intervals or as directed by the Contractor until the Contractor's RCT has determined  
14 the contamination is below remedial goals.

15  
16 *ARA-23: All Other Areas:*

17 This area is shown on drawings C-2 through C-6. The contamination found in this area is  
18 Cesium-137. This contamination likely is in the top 3 inches. Due to the large size of the  
19 contaminated area, the Subcontractor shall limit excavation activities to plots no larger than  
20 10 acres.

21  
22 The site contains many large rocks (1 to 2 feet in diameter) covering an area of 45,629 square  
23 feet and an average depth of 2 feet (approximately 3380 cubic yards). The rocks shall be  
24 removed and disposed of with the contaminated soil.

25  
26 The "first cut excavation" of a plot shall be 3 inches in depth. The Contractor's RCT shall  
27 perform field screening to determine the remaining contamination. The Contractor will re-  
28 survey the area to identify the boundaries of any remaining contamination. Screening and  
29 surveying shall take approximately 2 working days.

30  
31 During the field screening and re-surveying, the Subcontractor shall move to an adjacent plot  
32 and perform the "first cut excavation" of 3 inches.

33  
34 If required, the Subcontractor shall return to any plot and perform "selective excavation" at 3  
35 inch intervals or as directed by the Contractor until the Contractor's RCT has determined the  
36 contamination is below remedial goals.

37  
38 This sequence shall continue until all soil within the limits of excavation have been cleared  
39 by the Contractor's Representative and dust control measures have been implemented.

40  
41 OBLITERATION OF ASPHALT:

42  
43 The Subcontractor shall obliterate all asphalt in the excavation boundaries. The material  
44 shall be delivered to the disposal facility with the excavated soils.

1 BACKFILLING AND GRADING:  
2

3 General: Backfill requirements are anticipated to vary by site. The excavations shall be  
4 cleared of all trash and debris prior to backfilling or grading. Excavations that constitute a  
5 physical hazard as determined by the Contractor shall be backfilled. All backfill or fill  
6 material shall be free from trash, organic matter and frozen particles. Backfilling may be  
7 done when the excavation depth is greater than 1 ft. from the original grade. Backfilling shall  
8 be done only when approved by the Contractor. In excavations that are shored, shoring and  
9 formwork shall be removed or raised as backfill or fill is placed. Areas where only the top 3  
10 to 12 inches of soil are removed may not require backfill if the surface drainage can be  
11 maintained as to not allow ponding. Upon completion of excavation work at a designated  
12 area, the sides of all excavations not being backfilled shall be graded to a smooth contour  
13 (4:1 maximum slope). In all excavations, modifications to the site may be made by grading  
14 or other means to provide drainage of surface water from the site.  
15

16 Placement: Concentrated dumping of backfill material into excavations will not be  
17 permitted. All material must be placed in uniform layers not to exceed 8-in. loose  
18 measurement and brought up simultaneously. No water shall be used for placing, settling or  
19 compacting backfill or fill except to obtain optimum moisture content.  
20

21 Compaction: Unless otherwise indicated on the drawings or specifications, compact all  
22 backfill using 3 to 4 passes by mechanical devices such as rollers, vibratory compactors or  
23 mechanical tampers. Each 8-in., maximum, loose measurement lift shall be compacted  
24 before the next lift is placed thereon. Compacted backfill or fill density and moisture content  
25 may be monitored by the Contractor at any location and depth. Sections of backfill or fill  
26 failing to meet the minimum compaction requirements shall be corrected prior to placement  
27 of subsequent lifts.  
28

29 BORROW:  
30

31 Borrow material shall be used as backfill as required. The location of select pit run gravel is  
32 indicated in the Special Conditions.  
33

34 DECONTAMINATION:  
35

36 Decontamination of all Subcontractor equipment or tools shall be the responsibility of the  
37 Subcontractor. If after the Subcontractor has made every attempt to decontaminate an item,  
38 the Subcontractor and the Contractor's RCT determine that the Subcontractor was  
39 unsuccessful, the Contractor may elect to attempt decontamination. The Contractor  
40 decontamination shall be completed within 60 working days. If the Contractor successfully  
41 decontaminates an item, the Subcontractor may be required to reimburse the Contractor for  
42 costs of the decontamination, not to exceed 100% of the item's replacement costs. If  
43 decontamination proves impracticable or impossible, General Conditions (GC) Article GC-6  
44 will then be invoked.

1 The decontamination activities will be performed within the contamination areas. RCT  
2 support will be provided by the Contractor when establishing these areas. All tools and  
3 equipment will be decontaminated with dry methods using brooms, wire brushes and putty  
4 knives. If equipment has residual contamination after the initial dry decontamination efforts,  
5 it will be cleaned with low volume, high pressure water from a portable spray unit. The tools  
6 and equipment to be cleaned will be isolated in the decontamination pad. Any dry material  
7 and water used for decontamination efforts will be collected and disposed of at an approved  
8 facility. All water used for decontamination must be contained within the decontamination  
9 pad until it can be transported to the disposal facility for disposal. Upon completion of the  
10 removal action, the decontamination pad must be size reduced, transported, and disposed of  
11 at an approved facility.

12  
13 SOIL REMOVAL FROM BASALT OUTCROPPINGS:

14  
15 Contaminated soil may be in contact with basalt outcroppings. Exposed outcroppings shall  
16 be screened by the Contractor's RCT. If the screening results indicate the remedial action  
17 goal has not been met, the Subcontractor shall take every effort to remove contaminated soil  
18 from the rock outcroppings including brooming and/or vacuuming. Details of the proposed  
19 method shall be addressed in the Construction Work Plan vendor data submittal.

20  
21 METHOD OF MEASUREMENT:

22  
23 Dust Control: Dust control will not be measured for separate payment.

24  
25 Clearing Vegetation: Clearing vegetation will not be measured for separate payment.

26  
27 Pre-operational Test: Pre-operational testing will have no measurement.

28  
29 Utility Removal: Utility removal will not be measured for separate payment.

30  
31 First Cut Excavation: First Cut Excavation will not be measured for separate payment.

32  
33 Selective Excavation: Selective excavation will be measured by the cubic yard in its original  
34 position from field survey, photogrammetric cross sections using the average end area  
35 method with no correction for curvature or soil expansion, or other methods as agreed upon  
36 between the Contractor and the Subcontractor.

37  
38 Obliteration of Asphalt: Obliteration of asphalt will be measured by the square yard in its  
39 original position.

40  
41 Backfill: Backfill material will not be measured for separate payment.

42  
43 Borrow: Borrow material will be measured by the cubic yard in its original position.

44

1 Soil Removal from Basalt Outcroppings: Soil removal from basalt outcroppings will not be  
2 measured for separate payment.

3  
4 BASIS OF PAYMENT

5  
6 Dust Control: No separate payment will be made for dust control. It shall be considered  
7 incidental to other items of work.

8  
9 Clearing Vegetation: No separate payment will be made for clearing vegetation. It shall be  
10 included in the lump sum bid priced for "first cut excavation".

11  
12 Pre-operational Test: No separate payment will be made for pre-operational testing. It shall  
13 be included in the lump sum bid price.

14  
15 Utility Removal: No separate payment will be made for utility removal. It shall be  
16 considered incidental to other items of work.

17  
18 First Cut Excavation: Payment will be made at the contract lump sum price. The payment  
19 shall be full compensation for all work associated therewith, including but not limited to,  
20 surveying of excavation boundaries, mobilization, excavation of soil, loading, minor  
21 decontamination required to clear the dump trucks out of the excavation boundaries, transport  
22 to the disposal facility, backfill, incidental dust control, control of storm water, and  
23 demobilization.

24  
25 Selective Excavation: Payment shall be made at the contract unit price per cubic yard of  
26 material removed. The payment shall include, but not be limited to, mobilization, excavation  
27 of soil, loading, minor decontamination required to clean the dump trucks out of the  
28 excavation boundaries, transport to the disposal facility, backfill, incidental dust control,  
29 control of storm water, and demobilization.

30  
31 Obliteration of Asphalt: The accepted quantities of obliteration of asphalt will be paid for at  
32 the contract unit price per square yard of asphalt removed.

33  
34 Borrow: Borrow will be paid for at the contract unit price per cubic yard of soil in its original  
35 location. The cost shall include loading, hauling, and compacting the material from onsite  
36 borrow pits to various excavation areas.

37  
38 Soil Removal from Basalt Outcroppings: No separate payment will be made for soil  
39 removal. It shall be considered incidental to "selective excavation".

Project Title: **Waste Area Group 5 Remedial Design/Remedial Action - Phase II**  
Document Type: **Construction Specifications** Project Number: 020911  
SPC: 317

1 FIELD QUALITY CONTROL:

2

3 Topographic surveys will be conducted by the Contractor prior to the start and upon  
4 completion of the excavation work to verify quantities. The Subcontractor may provide  
5 confirmatory survey.

6

7 The Subcontractor shall be responsible to in-process inspection during execution of all work.  
8 Surveillance will be performed by the Contractors Representative to verify compliance of the  
9 work to the drawings and specifications.

10

11 END OF SECTION 02200

Project Title: **Waste Area Group 5 Remedial Design/Remedial Action- Phase II**  
Document Type: **Construction Specifications** Project Number: 020911  
SPC: 317

1 SECTION 02486--REVEGETATION

2  
3 PART 1--GENERAL

4  
5 SUMMARY:

6  
7 This work shall consist of seedbed preparation, sowing of grasses, and application of  
8 fertilizer.

9  
10 Section Includes: Work includes, but is not limited to:

11  
12 Prepare seed bed, furnish and sow seed, and furnish and apply fertilizer.

13  
14 Related Work: Section 02200 - Earthwork

15  
16 REFERENCES:

17  
18 The following documents, including others referenced therein, form part of this Section to the  
19 extent designated herein.

20  
21 Guidelines for Revegetation of Disturbed Sites at the Idaho National  
22 Engineering Laboratory

23  
24 SUBMITTALS:

25  
26 The Subcontractor shall submit seed mix certification for approval by the Contractor 8 days  
27 prior to revegetation.

28  
29 PART 2--PRODUCTS

30  
31 The Subcontractor shall furnish the materials and equipment necessary to revegetate  
32 disturbed sites.

33  
34 MATERIALS:

35  
36 Grass Mix: The grass species shall be in accordance with the referenced Guideline for  
37 Revegetation of Disturbed Sites. Each grass species shall be applied at the rate specified  
38 below.

39  
40 The following grass mix shall be used for roadsides and all other disturbed areas:

Grass Mix #2

SPECIES	RATE OF APPLICATION (POUNDS PER ACRE PURE LIVE SEED)
P-27 Siberian wheatgrass	4
“Ephraim” Crested wheatgrass	5
“Sodar” Streambank wheatgrass	9
Total	18

1  
2 Seed Mix Sources:

3  
4 Approved dealers for the seed mixes are:

- 5  
6 Granite Seeds (801) 768-4422  
7 Grimm Growers (208) 785-0830  
8  
9 Wind River Seed (307) 568-3361  
10 Maple Leaf (800) 287-3162.

11  
12 Fertilizer: Fertilizer shall be 16-48-0 (NPK) ammonium or diammonium phosphate. Each  
13 component of the fertilizer may vary two percent.

14  
15 Mulch: Mulch shall be processed grass straw.

16  
17 EQUIPMENT:

18  
19 Seedbed Preparation: Use disks, harrows, roller harrow-packers (culti-packers), tooth type  
20 harrows, shovels, or other similar equipment as required to prepare the seedbed.

21  
22 Seeding and Fertilizing: Use equipment such as drills with double disc and agitator, ground  
23 driller hand seeders, or culti-packers with seed boxes to apply seeding and fertilizer. Do not  
24 use dry broadcast seeders or hydroseeders.

25  
26 PART 3--EXECUTION

27  
28 Season of Work: Seeding shall be done between September 1 and December 15. Areas to be  
29 seeded shall be maintained reasonably free of weeds. Weeds shall be kept from going to  
30 seed.

31  
32 Seedbed Preparation: Soil shall be tilled a minimum depth of 3 inches. The seedbed shall be  
33 firm below seeding depth and well pulverized and loose on top. It shall be free of clods and  
34 weeds. Seedbed preparation shall not be performed when soil conditions are not suitable for  
35 tilling; too dry, too wet, frozen, etc. Tillage shall produce cross-slope furrows on slopes.

1 On areas subject to severe erosion, the extent of seedbed preparation shall not exceed that  
2 which can be seeded in one day.

3  
4 Fertilizing: Fertilizing shall closely follow seedbed preparation. Fertilizer shall not be mixed  
5 with seed. Fertilizer shall be drilled. Fertilizer shall be uniformly applied at a rate of 50  
6 pounds per acre.

7  
8 Seeding: Seeding shall closely follow fertilizing. If the seedbed has been disturbed, then  
9 Field Operations shall prepare the seedbed again. Seeds shall be thoroughly mixed prior to  
10 application. Seeds shall be uniformly applied at the previously specified rate. Seeds shall be  
11 buried 0.25 to 0.75 inches. Seeding shall not be performed when weather conditions are  
12 unfavorable: high wind, heavy rain, etc.

13  
14 Drill seeding shall be performed in areas with slopes of 3:1 or flatter and where there is not  
15 excessive rock and gravel. Drilling shall maintain cross-slope furrows on slopes.

16  
17 Mulching: Mulch shall be spread uniformly at a rate of 1 ton per acre. Mulch shall be  
18 anchored into the soil to a depth of at least 2 in., and with no more than one pass of the  
19 equipment. Mulching shall not be performed when wind interferes with mulch placement.

20  
21 Protection: Traffic over the seeded area shall be prohibited by the subcontractor during all  
22 work activities performed under this contract.

23  
24 METHOD OF MEASUREMENT

25  
26 Revegetation: Revegetation will be measured by the acre using field survey.

27  
28 BASIS OF PAYMENT

29  
30 Revegetation: The accepted quantities of revegetation will be paid for at the contract unit price  
31 per acre of revegetated area. This price shall include seedbed preparation, seeding, mulching  
32 and anchoring, and fertilizing.

33  
34 FIELD QUALITY CONTROL:

35  
36 Surveillance will be performed by the Contractor's Representative to verify compliance of the  
37 work to the drawings and specifications.

38  
39 END OF SECTION 02486

