

Appendix E-3
Revised Phase II Construction Specifications
(SPC-472)

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CONSTRUCTION SPECIFICATION

SUBCONTRACT NO. TBD
PROJECT FILE NO. 023614

OU 3-13 Group 1 Tank Farm Interim Action Phase 2

Approved for Construction

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

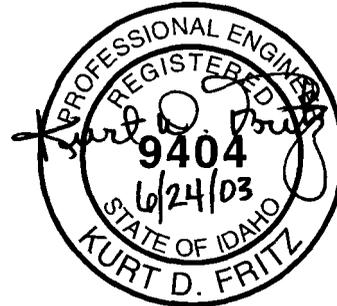


and Environmental Laboratory

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**OU 3-13 Group 1 Tank Farm Interim Action Phase 2
Revision 0**

The following Sections of this Specification were prepared under the direction of the Professional Engineers as indicated by the seal and signature provided on this page. The Professional Engineers are registered in the State of Idaho to practice Civil Engineering.



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- 01051 -- Construction Surveying and Staking
- 01300 -- Submittals

Division 2 -- Site Work

- 02200 -- Earthwork
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- 02576 -- Pavement Sealing
- 02741 -- Plant Mix Pavement

**SPECIFICATIONS
FOR
OU 3-13, Group 1, Tank Farm Interim Action Phase 2
Revision 0**

Prepared for:

**U. S. DEPARTMENT OF ENERGY
IDAHO OPERATIONS OFFICE**

Idaho Falls, Idaho

Project File No. 020978

June 2003

**BECHTEL BWXT IDAHO, LLC (BBWI)
Idaho Falls, Idaho 83415**

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1 SECTION 01005--SUMMARY OF WORK

2
3 PART 1--GENERAL

4
5 SUMMARY:

6
7 The Subcontractor shall furnish plant, labor, material, equipment, and supplies (except
8 Government-furnished materials and/or equipment) and perform work and operations
9 necessary to construct the **OU 3-13 Group 1 Tank Farm Interim Action Phase 2 Project**
10 complete, in accordance with the subcontract drawings and these specifications.

11
12 Section Includes:

13
14 The Work includes construction work associated with paving two areas of the INTEC tank
15 farm. This work includes but is not limited to:

- 16
17 • Excavation and grading to establish the design grades
18 • Compacting the existing grade and installing plant mix paving
19 • Installing storm water drain pipe
20 • Applying seal coat to new plant mix paving
21 • Surveying for grade control
22

23 Note: In the tank farm area, stringent load restrictions have been established. All operations
24 and equipment shall be in accordance with the attached INTEC Technical Procedure INTEC-
25 TPR-P7.5-A1 and drawing 097726, which identifies the tank farm load zones.

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 **CODE OF FEDERAL REGULATIONS (CFR)**

- 33 29 CFR 1910 OSHA Occupational Safety and Health Standards
34 29 CFR 1926 OSHA Health and Safety Standards for Construction

35
36 **BECHTEL BWXT, IDAHO (BBWI)**

37 Subcontractor Requirements Manual

38
39 Health and Safety Plan for Waste Area Group 3, Operable Unit 3-13, Group 1 Soils, Tank
40 Farm Interim Action, INEEL/EXT-2000-00194

41
42 Waste Management Plan for the INTEC Operable Unit 3-13, Group 1, Tank Farm Interim
43 Action, Phases I and II, DOE/ID-10770
44

Project Title: **OU 3-13 Tank Farm Interim Action Phase 2**
Document Type: **Construction Specifications** Project Number: 020978
Revision Number: 0

1 Unless otherwise specified, references in these specifications or on the subcontract drawings
2 to other specifications, codes, standards or manuals that are part of these specifications, but
3 not included herein, shall be the latest edition, including any amendments and revisions, in
4 effect as of the date of this Specification.

5
6 SUBMITTALS:

7
8 See Section 01300, Submittals and the Vendor Data Schedule for additional submittal
9 requirements.

10
11 QUALITY ASSURANCE:

12
13 Quality Assurance Program requirements shall exist to assure that work performed is in
14 conformance with the requirements established by the drawings and this specification. QA
15 Program criteria applicable to this scope of work is addressed in the Special Conditions,
16 BBWI Subcontractor Requirements Manual, General Provisions, and these specifications,

17
18 Standard Products: The materials and equipment furnished by the Subcontractor shall be
19 standard products of manufacturers regularly engaged in the production of the type of
20 materials and equipment required and shall be of the manufacturer's latest standard designs.
21 Where two or more units of the same type and class of material or equipment are required,
22 the units shall be the product of the same manufacturer, and shall be identical insofar as
23 possible. The component parts of a unit of equipment need not be the products of the
24 manufacturer.

25
26 SAFETY, HEALTH AND ENVIRONMENT:

27
28 In general work shall be in compliance with the applicable sections of 29 CFR 1910, 29 CFR
29 1926, the BBWI Subcontractor Requirements Manual, and the Health and Safety Plan for
30 Waste Area Group 3, Operable Unit 3-13, Group 1 Soils, Tank Farm Interim Action,
31 INEEUEXT-2000-00194.

32
33 DELIVERY, STORAGE AND HANDLING:

34
35 All materials normally packaged shall be delivered to the site in the original, unopened
36 packages with labels intact. Upon arrival, the Subcontractor shall inspect the materials or
37 equipment for damage.

38
39 Materials and equipment shall be stored and handled in accordance with the manufacturer's
40 instructions. Protect construction materials, equipment, flange facings, threads, machined or
41 painted, and other exposed finished surfaces from damage.

1 WASTE MANAGEMENT:

2
3 All work shall be in compliance with the applicable sections of the Waste Management Plan
4 for the INTEC Operable Unit 3-13, Group 1, Tank Farm Interim Action, Phases I and II, and
5 the BBWI Subcontractor Requirements Manual.

6
7 PART 2--PRODUCTS

8
9 MATERIALS:

10
11 New Materials and Equipment: Materials and equipment received by the Subcontractor in a
12 damaged condition shall be repaired or replaced by the Subcontractor as directed by the
13 Contractor. Materials and equipment damaged by the Subcontractor shall be repaired or
14 replaced by the Subcontractor.

15
16 Approved Equal: Whenever a product is specified by using a proprietary name, the name of a
17 manufacturer, or vendor, the specific item mentioned shall be understood as establishing
18 type, function, dimension, and quality desired. Other manufacturer's products will be
19 accepted, provided sufficient information is submitted to determine that products proposed
20 are equivalent to those named.

21
22 Existing Materials, Equipment and Structures: Existing materials, equipment and structures,
23 including paint and protective coatings, involved under this Subcontract shall be thoroughly
24 inspected by the Subcontractor before starting any work. Any defects or damages, the repair
25 of which are not covered under these specifications or subcontract drawings, shall be reported
26 in writing to the Contractor by the Subcontractor. The Subcontractor shall place reinstalled
27 operating equipment in an operating condition that is at least as good as it was at the time the
28 Subcontractor started work.

29
30 Government Furnished Materials (GFE): Items shown on the subcontract documents as
31 (GFE) are materials and/or equipment that is furnished by the Government to be installed by
32 the Subcontractor. A complete and composite list of such material is attached to the
33 Subcontract Specifications and is referred to as the Schedule "X" list.

34
35 Hazardous Chemicals and Substances: The Subcontractor shall comply with applicable
36 requirements of 29 CFR 1926.59, Hazard Communication Standard.

37
38 PART 3--EXECUTION

39
40 CONSTRUCTION AND INSTALLATION:

41
42 General: Materials and equipment shall be erected or installed only by qualified personnel
43 who are regularly engaged in the trades required to complete the work. The subcontract
44 drawings show the general arrangement and space allocation of the equipment specified. It

1 shall be the Subcontractor's responsibility to verify changes in conditions or rearrangements
2 necessary because of substitutions for specified materials or equipment. Where
3 rearrangements are necessary the Subcontractor shall, before construction or installation,
4 prepare and submit drawings of the proposed rearrangement for approval.
5

6 Coordination of Work: Where new work and existing facilities are shown on the drawings,
7 but are not located precisely by dimensions, the Subcontractor shall be responsible for proper
8 location and clearances and for correcting discrepancies and interferences in the work that are
9 a result of his operations. Work done by one trade that must be integrated with work of other
10 trades shall be laid out with due regard to the work done, or to be done, by other trades;
11 particularly if the work done by one trade depends upon completion or proper installation of
12 work done by other trades. The Subcontractor shall cooperate in coordinating his work with
13 work being done by others if their work must be integrated with the Subcontractor's work.
14 The Subcontractor shall notify the Contractor at least one week prior to starting of the date on
15 which the Subcontractor proposes to proceed with the work.
16

17 Workmanship: Work shall be done in a skillful and workmanlike manner. No major cuts or
18 holes, not shown on the drawings, shall be made without prior approval of the Contractor.
19 After the pavement and/or piping is installed, exposed holes, cracks and other defects shall be
20 neatly patched and the patched areas shall match the adjoining materials and finish.
21

22 REPAIR AND RESTORATION:

23
24 Materials and equipment repaired or replaced by the Subcontractor shall be subject to
25 acceptance by the Contractor.
26

27 PROTECTION:

28
29 Construction materials, equipment, and other exposed finished surfaces shall be protected
30 from damage during construction.
31

32 END OF SECTION 01005

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 layout and control the construction work. The Subcontractor shall
11 perform surveying to establish horizontal and vertical control, establish and maintain grade
12 for asphalt paving, pipe layout and alignments, and provide as-built surveys. All
13 underground pipelines or structures uncovered during the excavation shall also be located by
14 survey. The Subcontractor may perform the surveying, or an independent survey firm,
15 provided the work is performed under the supervision of a Registered Land Surveyor in the
16 State of Idaho.

17
18 **All coordinates are based on INTEC site-specific horizontal coordinates and NRTS**
19 **vertical datum. NRTS vertical is 0.35 ft. higher than INTEC vertical datum.**

20
21 SUBMITTALS:

22
23 Submittals include but are not limited to the following:

24
25 Certification: Submit certification that the land surveyor is a registered professional.

26
27 As-built Survey Data: Submit as-built survey data of the final paved areas as completed.
28 The survey data shall be transmitted to the Contractor in hard copy and electronic format.
29 Electronic data shall be reduced and plotted by the Subcontractor in standard ASCII and
30 Autocad 14format. Electronic data shall be submitted on electronic media such as CD or Zip
31 Disk. All final submittals of survey data shall be bound and shall include the title and
32 description of the survey data, a table of contents or index, complete list with point number,
33 coordinates, elevation, component description and date. All surveys shall be conducted using
34 the established project datum. The limits of the as-built survey for each area shall include, as
35 a minimum, the following information. For paved areas, topographic shots shall be taken at
36 edges of pavement, comers, grade breaks and swales. For final pipe layout, as-built survey
37 shall define the alignment from the edge of pavement to the discharge point. Shots shall be
38 taken on top of the pipe at all grade breaks and/or every 25 lineal feet whichever is the shorter
39 distance. The survey shall be used to verify the pipe slope.

40
41 Grade Control Plan: Submit details and methods of controlling the grade of the existing
42 ground surface (subgrade) and asphalt surface. An existing polyolefin geomembrane liner
43 covers the tank farm 6 to 8 inches below the surface. To prevent puncture or damage to the
44 liner, identification and grade stakes or hubs shall not penetrate the ground greater than 4" in

1 depth. Alternate means of controlling the grade shall be addressed. In addition, the tank
2 farm soils contain loose gravel, which may make staking difficult.

3
4 See Section 01300, Submittals and Vendor Data Schedule for additional requirements.

5
6 QUALITY CONTROL:

7
8 Qualifications: Construction surveying and staking shall be accomplished under the direction
9 of a registered professional land surveyor.

10
11 PART 2--PRODUCTS

12
13 Stakes: An existing geomembrane liner covers the tank farm 6 to 8 inches below the surface.
14 To prevent puncture or damage to the liner, identification and grade stakes or hubs shall not
15 penetrate the ground greater than 4" in depth.

16
17 PART 3--EXECUTION

18
19 SURVEY REQUIREMENT:

20
21 Control: The Contractor will provide site-specific information and locations for survey
22 control. Do not proceed with any survey work until this information has been received.

23
24 Project Datum: Coordinates are based on INTEC site-specific horizontal coordinates and
25 NRTS vertical datum. NRTS vertical is 0.35 ft. higher than INTEC vertical datum. All
26 surveying for the project construction shall be based on this datum. The Subcontractor shall
27 verify and establish survey control inside the work area prior to commencement of
28 construction work.

29
30 Accuracy: Optical survey, tape measurement, and electronic measurements shall have a
31 minimum accuracy of ± 0.1 feet in horizontal locations and ± 0.05 feet in elevations.

32
33 Survey grade GPS receivers, if used, shall be Survey grade, dual-frequency, geodetic GPS
34 receivers that have a horizontal accuracy of 1 cm +/- 1 ppm of baseline length and a vertical
35 accuracy of 2 cm +/- 1 ppm of baseline length with either real-time or post-processing
36 differential correction.

37
38 FIELD QUALITY CONTROL:

39
40 Surveillance will be performed by the Contractor's Representative to verify compliance of the
41 work to the drawings, the specifications and PRD-5012 (Survey equipment calibration and
42 control) equipment survey logging requirements.

43
44 END OF SECTION 01051

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 specified in individual specification sections or on
9 the drawings, and tabularized on a Vendor Data Schedule. In the event of conflicting
10 requirements, the submittal requirements prescribed in the individual specification section
11 shall take top priority, the drawings second and the vendor data schedule last.

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

17
18 The Subcontractor shall be responsible for providing submittals in accordance with the
19 Subcontract General Provisions Document, providing submittals with adequate time for
20 review and resubmittal, and advising the Contractor of any submittal that may be delayed and
21 which might, if further delayed, extend completion of the project.

22
23 Section Includes, but is not limited to: The preparation, transmittal and delivery of
24 documents by the Subcontractor to the Contractor as required in the "Submittals" subdivision
25 of the specification sections and as provided on the Vendor Data Schedule.

26
27 Related Sections: General Provisions, Subcontractor Requirements Manual, Special
28 Conditions, Drawings, Vendor Data Schedule, and other sections of these specifications
29 apply to this section.

30
31 REFERENCES:

32
33 The following documents, including others referenced therein, form part of this Section to the
34 extent designated herein:

35
36 AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

37
38 ANSI Y 14.1 Drawing Sheet Size and Format

39
40 SUBMITTALS:

41
42 General Procedures: Vendor data, whether prepared by the Subcontractor or Subcontractor's
43 subtier or supplier, shall be submitted as instruments of the Subcontractor. Therefore, prior
44 to submittal, the Subcontractor shall ascertain that material and equipment covered by the

1 submittal and the contents of the submittal itself, meet all the requirements of the subcontract
2 specifications, drawings, or other contract documents.

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

8
9 Vendor Data Schedule: Vendor Data required by the specification sections or the drawings to
10 support design, construction, and operation of the project is identified on a Vendor Data
11 Schedule. The Vendor Data Schedule provides a tabular listing by item number, drawing or
12 specification reference, and description of the item or service. The type of submittal is
13 identified by a "Vendor Data Code", and the time required to submit the item is identified by
14 a "When to Submit" code. An "Approval" code specifies whether the submittal is for
15 Mandatory Approval or for Information Only. One copy of routine paper or electronic file
16 submittals are required; additional copies may be required by the Vendor Data Schedule.
17 Electronic file submittals are preferred. Submittals that can not be scanned or provided
18 electronically, such as large shop drawings, will require 6 copies for Mandatory Approval and
19 4 copies for Information Only. Material or color samples will require 2 sets for Mandatory
20 Approval and 1 set for Information Only.

21
22 Or Equal Material or Equipment Submittals: All "or equal" materials, equipment or systems
23 shall be identified and submitted for approval as required by the Subcontractor Requirements
24 Manual.

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

31
32 If an "or equal" material, equipment or system is approved, the Subcontractor shall be
33 responsible for backup material necessary to include the material, equipment or system in the
34 technical documents. In most cases this includes "red lining" a set of design drawings, and
35 specifications to provide an "Approved for Construction" set of specifications and design
36 drawings which incorporate the changes caused by the "or equal" item. These "red line"
37 drawings shall be submitted prior to use of the "or equal" item. Any calculations or other
38 backup material necessary to show that changes are adequate shall be included with the "red
39 line" drawings and specifications.

40
41 Vendor Data Transmittal and Disposition Form 431.13: All vendor data shall be submitted to
42 the Contractor using the Vendor Data Transmittal and Disposition Form. The form provides
43 the Subcontractor a method to submit vendor data and provides the Contractor a means of
44 dispositioning the submittal. The Subcontractor shall list the Vendor Data Schedule item

1 number, a Vendor Data Transmittal tracking number (if applicable), the drawing or
2 specification number reference, a Tag Number (if applicable), the submittal status (e.g.,
3 Mandatory Approval, Information Only, Re-submittal, or Or-equal), the Revision Level, and
4 the item description. The description should include the heat or lot number for items
5 requiring Certified Mill Test Reports. The description should be complete enough that a
6 person unfamiliar with the project can determine what the submittal includes.

7
8 Disposition by the Contractor: The Contractor's comments and required action by the
9 Subcontractor will be indicated by a disposition code on the submittal. The disposition codes
10 will be classed as follows:

- 11
- 12 (A) "Work May Proceed." Submittals so noted will generally be classed as data that
13 appears to be satisfactory without corrections.
14
 - 15 (B) "Work May Proceed with Comments Incorporated. Revise Affected Sections and
16 Resubmit Entire Submittal." This category will cover data that, with the
17 correction of comments noted or marked on the submittal, appear to be
18 satisfactory and require no further review by the Contractor prior to construction.
19
 - 20 (C) "Work May NOT Proceed. Revise and Resubmit." Submittals so dispositioned
21 will require a corrected resubmittal for one of the following reasons:
22 1) Submittal requires corrections, per comments, prior to final review.
23 2) Submittal data incomplete and requires more detailed information prior to
24 final review.
25 3) Submittal data does not meet Subcontract document requirements.
26
 - 27 (D) "Accepted for Use. Information Only Submittal." Submittals so dispositioned
28 will generally be classified as Information Only for as-specified material and
29 equipment.
30

31 Mandatory Approval coded vendor data will be reviewed by the Contractor and receive an A,
32 B, or C disposition. The Contractor may provide internal review of Information Only
33 submittals. In the event that comments are generated on an Information Only submittal, the
34 submittal may be dispositioned B or C and returned to the Subcontractor for appropriate
35 action. Information Only submittals without comments will receive a D disposition.
36

37 All submittals will be returned to the Subcontractor. Acknowledgment of receipt of
38 dispositioned vendor data by the Subcontractor will not be required.
39

40 The Contractor will return dispositioned submittals with reasonable promptness. The
41 Subcontractor shall note that a prompt review is dependent on timely and complete
42 submittals in strict accordance with these instructions.
43
44

1 PART 2--PRODUCTS (SUBMITTAL REOUIREMENTS)

2
3 INSTALLATION, APPLICATION, AND ERECTION INSTRUCTIONS:

4
5 Installation, application, and erection instructions shall be provided where specifically
6 required by other sections. Installation, application, and erection instructions shall be clear,
7 concise, and detailed, and shall utilize drawings and pictures to the extent necessary. The
8 instructions shall include procedures for delivery acceptance, unpacking, inspection, re-
9 packing, storage, handling, preparation of supporting work, assembly, and incorporation of
10 the material/equipment into the work. The instructions shall include sequences, precautions,
11 and tolerances.

12
13 In general, the Contractor's Representative will inspect the work to the criteria and
14 instructions prescribed in the manufacturer's installation, application and erection
15 instructions. The Subcontractor shall not deviate from the written instructions without prior
16 written approval and direction from the manufacturer; such approval and direction shall be
17 submitted to the Contractor as an attachment to the manufacturer's installation, application
18 and erection instructions.

19
20 DRAWINGS:

21
22 Where specifically required by other sections, drawings shall be provided. Unless otherwise
23 specified, submittals shall consist of black-line printed copies. Hard copies and an electronic
24 copy shall be submitted where required by other specification sections. Electronic copies of
25 CAD generated drawings shall be provided in a form that will transfer to the Contractor's
26 software using IGES or custom software provided by the Subcontractor. Sepia type prints are
27 not acceptable. One set of copies will be returned to the Subcontractor marked to show the
28 required corrections or approval.

29
30 The following additional submittals shall be required as indicated on the Vendor Data
31 Schedule:

32
33 "As-Built" Drawings: Copies of the construction drawings shall be updated to include
34 all changes or modifications made during construction and to reflect the actual
35 conditions of construction. Each drawing shall be marked "As-Built", signed by the
36 Subcontractor representative, and be suitable for XEROX copying or microfilming.

37
38 Preparation and Size: Details and information shall be clearly drawn, dimensioned (including
39 tolerances), noted, cross referenced and shall be of such quality as to ensure legible B (11 x
40 17 in.) size photocopy reproductions from microfilm (by others). Drafting and drawing
41 standards shall be consistent with the practices established by ANSI Y 14.1 or other
42 acceptable standards and as specified herein:

43
44 Where applicable, views shall be oriented so that plant north faces up or to the left.

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1 Use of abbreviations shall be avoided where space permits spelling in full; if used,
2 abbreviations shall be described in a legend on the drawing.

3

4 SPECIAL PACKAGING, HANDLING, OR STORAGE PROCEDURES:

5

6 Where specifically required by other sections, special packaging, handling, rigging, shipping,
7 storage, or preservation procedures shall be provided. These procedures shall contain the
8 following minimum requirements as applicable:

9

10 1. Measures taken to prevent damage during transit.

11 2. Detailed description of container design.

12 3. Overall dimensions and approximate weight of container and contents.

13 **4.** Recommended method for off-loading.

14 5. List of required special off-loading devices.

15 6. Special instruction for proper packaging and preventative maintenance during storage at
16 the site.

17 7. Special instructions for marking.

18 8. Safety code labels, if applicable.

19

20 **PART 3--EXECUTION (NOT APPLICABLE)**

21

22 END OF SECTION 01300

1 SECTION 02200--EARTHWORK

2
3 PART 1--GENERAL

4
5 SUMMARY:

6
7 Section Includes, but is not limited to:

- 8
9 1. Excavating all materials encountered, of every description, for completion of the
10 Subcontract as shown on the drawings and as specified herein.
11 2. Grading and compacting subgrade for paving.
12 3. Excavating and grading for storm drain piping.
13 4. Finish grading and grading for surface drainage.

14
15 REFERENCES :

16
17 The following documents, including others referenced therein, form part of this Section to the
18 extent designated herein.

19
20 AMERICAN ASSOCIATION OF STATE HIGHWAY TRANSPORTATION OFFICIALS
21 (AASHTO)

22

23 AASHTO	Standard Specifications for Transportation Materials and Methods of
24	Sampling and Testing
25 AASHTO M145	Recommended Practice for the Classification of Soils and Soil-
26	Aggregate Mixtures for Highway Construction Purposes
27 AASHTO M288	Standard Specification for Geotextile Specification for Highway
28	Applications
29 AASHTO T11	Standard Method of Test for Materials Finer Than 75 Micrometer (No.
30	200) Sieve in Mineral Aggregates by Washing
31 AASHTO T27	Standard Method of Test for Sieve Analysis of Fine and Coarse
32	Aggregates
33 AASHTO T99	Standard Method of Test for the Moisture-Density Relations of Soils
34	Using a 5.5 lb Rammer and a 12 in. Drop
35 AASHTO T238	Standard Method of Test for Density of Soil and Soil-Aggregate in
36	Place by Nuclear Methods (Shallow Depth)

37
38 **CODE OF FEDERAL REGULATIONS**

39
40 29 CFR 1926 OSHA Safety and Health Regulations for Construction, Subpart P

41
42 **IDAHO TRANSPORTATION DEPARTMENT (ITD)**

43
44 SSHC Standard Specification for Highway Construction

1 SUBMITTALS:

2
3 Submittals include, but are not limited to the following:

4
5 Excavation/Grading Plan: The Subcontractor shall submit a construction work plan detailing
6 the following:

- 7 • Identify equipment to be used to excavate, grade, haul, place and compact the
8 existing tank farm soils.
- 9 • Construction methods and details for grading, placing and compacting fill
10 materials on slopes as steep as 1.5H:1V. Identify and describe the use of special
11 equipment (ie. winch system) needed for slope operations how compaction will be
12 achieved.

13
14 See Section 01300, Submittals and the Vendor Data Schedule for additional submittal
15 requirements.

16
17 PART 2--PRODUCTS

18
19 MATERIALS :

20
21 Backfill and Fill Material: Excavated material shall be used as fill material and finish
22 grading. "Satisfactory" excavated soil materials free of clay, gravel larger than 3 in. in any
23 dimension, debris, waste, frozen materials, vegetable and other deleterious matter shall be
24 used as fill as required. Soil material from outside the tank farm fence for use as fill is not
25 permitted.

26
27 PART 3--EXECUTION

28
29 JOB CONDITIONS:

30
31 Numerous small buildings and protrusions (i.e., valve boxes, wells, piping, electrical conduit,
32 etc.) are located in the areas to be disturbed. Surface soils contain 1" to 2" well-rounded
33 gravels with little to no fines.

34
35 Tank Farm Load Restrictions: In the tank farm area, stringent load restrictions have been
36 established. All operations and equipment shall be in accordance with the attached INTEC
37 Technical Procedure INTEC-TPR-P7.5-A1 and drawing 097726 which identifies the tank
38 farm load zones.

39
40 Black iron posts have been placed on the tank farm to easily identify locations of the **A, B**
41 and **C** load zones. The location of the posts shall be referenced prior to removal for
42 construction operations and replaced in their original position at the completion of
43 operations.

1 EXCAVATION:

2
3 Grading Surface Material: The areas to be occupied by new plant mix pavement shall be
4 excavated and graded to accommodate the required finished surface elevations as shown on
5 the drawings. Excavation activities shall not damage the existing polyolefin liner covering the
6 tank farm. If the liner is encountered in an excavation, it shall be brought to the immediate
7 attention of the Contractor.

8
9 The removed soil shall be used as fill, finish grading or removed and disposed of in
10 accordance with the Waste Management Plan. The resulting area shall be completely
11 compacted in accordance with the applicable part of these specifications

12
13 Earth Excavation: Earth excavation includes removal and disposal of soil material of any
14 classification encountered that are not classified as rock excavation or unauthorized
15 excavation.

16
17 Unauthorized Excavation: Unauthorized excavation consists of removal of materials beyond
18 indicated elevations or dimensions without specific direction by the Contractor.
19 Unauthorized excavation, as well as remedial work directed by the Contractor, shall be at the
20 Subcontractor's expense.

21
22 Culvert/HDPE Drain Pipe Grade: Unless otherwise shown on the drawings, the CMP culvert
23 and HDPE drain pipe shall be field routed on the existing surface to allow for a minimum
24 slope of 0.5%. Install pipe to establish a uniform slope between grade breaks. Minor grading
25 of the surface soils may be required.

26
27 Stockpiling and Disposal: Excavated material that is suitable and required for backfilling or
28 grading shall be piled in an orderly manner as indicated in the Special Conditions. Excavated
29 materials not required or not approved for backfilling or grading shall be disposed of.
30 Unused excavated earth waste shall be hauled to areas designated by the Contractor and
31 disposed of in a manner specified in the Special Conditions.

32
33 Control of Water: All disturbed areas shall be kept free of standing water. The
34 Subcontractor shall furnish, install and operate the equipment required to keep disturbed
35 areas free from water at all times. Water shall be disposed of in a manner that will not cause
36 injury to property.

37
38 BACKFILL OR FILL:

39
40 General: The excavations shall be cleared of all trash and debris prior to grading, backfilling
41 or paving. All backfill or fill material shall be free from trash, organic matter and frozen
42 particles. Backfilling or filling shall be done only when approved by the Contractor.

43
44

1 Existing Gravel Base: Prior to placement of gravel fill material, the existing subbase shall be
2 graded smooth, brought to optimum moisture content, and compacted to at least 90%
3 maximum density as determined by the AASHTO T99.

4
5 Material containing excessive moisture shall be permitted to dry to a moisture content that
6 will permit the required compaction. No extra payment will be made for re-handling such
7 material to permit drying. Material that does not contain sufficient moisture to compact to
8 the required density shall be uniformly moistened as required.

9
10 Materials not compacted to the specified density shall be excavated and re-compacted to the
11 requirements for the class of compaction specified at no cost to the Contractor.

12
13 Buried Pipe: In locations where the HDPE pipes connect to the CMP culvert or where the
14 HDPE pipe is routed under the existing duct bank, the excavated soils shall be used as
15 backfill around the pipe until it daylights. Compaction around the pipe shall be by the use of
16 hand equipment only.

17
18 Placement: Concentrated dumping of backfill or fill material on the tank farm will not be
19 permitted. No water shall be used for placing, settling or compacting backfill or fill except to
20 obtain optimum moisture content. All material must be placed in uniform layers not to
21 exceed 8 in. loose measurement and brought up simultaneously and evenly on both sides of
22 foundation walls and around underground or covered structures and equipment such as
23 manholes, storage tank risers and pipe. Care shall be taken when backfilling, filling, or
24 compacting around any buried items or structures to prevent injury to the item being covered
25 and to prevent piercing or rupturing the existing subsurface membrane. Loose backfill or fill
26 may be placed as specified hereinafter.

27
28 Compaction: Unless otherwise indicated on the drawings or specifications, compact all
29 backfill and fill material. Unless otherwise indicated, all "compacted" backfill or fill shall be
30 compacted to at least 95% of maximum density at optimum moisture content as determined
31 by AASHTO T99. Loose measurement lifts shall be 8 inches maximum. Each lift shall be
32 compacted before the next lift is placed thereon. Compacted backfill or fill density and
33 moisture content may be measured by the Contractor at any location and depth. Sections of
34 backfill or fill failing to meet the minimum compaction requirements shall be corrected prior
35 to placement of subsequent lifts. No heavy equipment shall be allowed within 5 ft of a
36 structure or the foundation of any structure. No heavy equipment shall be allowed over
37 piping.

38
39 FIELD QUALITY CONTROL:

40
41 Surveillance will be performed by the Contractor's Representative to verify compliance of the
42 work to the drawings and specifications.

43
44 END OF SECTION 02200

1 SECTION 02430—CULVERTS/HDPE DRAIN PIPE

2

3 PART 1--GENERAL

4

5 SUMMARY:

6

7 Work shall include furnishing and installing new culverts and HDPE drain pipe in
8 accordance with these specifications and the subcontract drawings.

9

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

11

- 12 1. Furnish and install CMP culvert
- 13 2. Furnish and install HDPE drain pipe and fittings
- 14 3. Furnish and install Fernco couplers

15

16 REFERENCES:

17

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

20

21 AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

22

- 23 ASTM A 798 Standard Practice for Installing Factory-Made Corrugated Steel Pipe
24 for Sewers and Other Applications
- 25 ASTM D 3350 Standard Specification for Polyethylene Plastics Pipe and Fittings
26 Materials

27

28 AMERICAN ASSOCIATION OF STATE HIGHWAY TRANSPORTATION OFFICIALS
29 (AASHTO)

30

- 31 AASHTO M252 Corrugated Polyethylene Drainage Pipe, Type C

32

33 SUBMITTALS:

34

35 Submittals include, but are not limited to the following:

36

37 Product data: For the HDPE drain pipe and Fernco couplers, submit Manufacturer's product
38 data indicating compliance with the requirements of these specifications.

39

40 See Section 01300, Submittals and Vendor Data Schedule for additional submittal
41 requirements.

42

43

44

1 QUALITY CONTROL:

2
3 Items of Any One Classification: HDPE fittings shall be the product of one manufacturer, and
4 shall be used only for the services recommended by the manufacturer.

5
6 Materials, Products and Equipment: Materials, products and equipment shall be first quality
7 and be furnished and installed in strict accordance with the subcontract drawings and these
8 specifications.

9
10 PART 2--PRODUCTS

11
12 MATERIALS:

13
14 Culverts: The culverts shall be 16-gage minimum galvanized or aluminized corrugated steel
15 pipe.

16
17 HDPE Drain Pipe and Fittings: Non-pressurized, corrugated HDPE drainage pipe, couplers
18 and fittings shall be 6" diameter, single wall, plain style pipe. All hardware required for
19 complete installation shall be included. Joints shall use snap couplers. Pipe and fitting
20 material shall be high-density polyethylene meeting ASTM D3350 minimum cell
21 classification 324420C and meet the requirements of AASHTO M252 Type C. Possible pipe
22 selection meeting these requirements is Hancor's "AASHTO" single wall pipe.

23
24 Fernco Couplers: Fernco brand couplers shall be used for the connection between the CMP
25 culvert and HDPE drain pipe. All hardware required for complete installation shall be
26 included with the coupler.

27
28 Dandy Pipe Sock: Install Dandy Pipe Sock by Mirafi Products (www.mirafi.com) at each
29 HDPE drain pipe discharge location.

30
31 PART 3--EXECUTION

32
33 INSTALLATION:

34
35 Location: Install culverts and HDPE drain pipe to the lines and grades shown on the
36 drawings. HDPE pipe shall be field routed to maintain a minimum slope of 0.5%.

37
38 Earthwork: Excavation, backfilling and grading shall be performed in accordance with
39 Section 02200 Earthwork. Bedding for corrugated metal pipe and HDPE pipe shall be the
40 existing surface.

41
42 Pipe Testing: Hydrostatic pressure testing will not be required.

43

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- 1 Fernco Couplers: Couplers shall be installed in accordance with the manufacturer's
2 recommendations. Installation may require cutting or modifying culverts to ensure that the
3 connection is plumb and that flow is achieved. The Subcontractor shall be responsible for
4 installation of couplers in a manner that ensures proper operation. Any correction or repairs
5 necessary shall be performed by the Subcontractor.
6
- 7 Pipe Ballast: Place load ballast on the HDPE pipe, which will not damage the pipe to prevent
8 wind uplift and movement. Ballast shall consist of GFE furnished HDPE "sand tubes" as
9 shown on the design drawings. Ballast shall be centered perpendicular to the direction of the
10 pipe and placed at intervals of 30 lineal feet and within 10 lineal feet of the discharge point.
11
- 12 Dandy Pipe Sock: Installation shall be in accordance with the manufacturer's installation
13 guidelines.
14
- 15 FIELD QUALITY CONTROL:
16
- 17 Surveillance will be performed by Contractor's Representative to verify compliance of the
18 work to the drawings and specifications.
19
- 20 END OF SECTION 02430

1 SECTION 02576--PAVEMENT SEALING

2
3 PART 1--GENERAL

4
5 SUMMARY:

6
7 Provide all work, operations and material for application of an asphalt seal coat in accordance
8 with the subcontract drawing(s) and these specifications.

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

11
12 Surface cleaning and application of seal coat to the two asphalt areas shown on the
13 subcontract drawings.

14
15 SUBMITTALS:

16
17 Submittals include, but are not limited to the following:

18
19 Certification: Submit certification that asphalt complies with these specifications.

20
21 PART 2--PRODUCTS

22
23 Seal Coat: The seal coat shall be GSB-78, a blended liquefied gilsonite-paving asphalt blend
24 pavement sealer and rejuvenator by Asphalt Systems, Inc. It shall be supplied in ready to use
25 form.

26
27 PART 3--EXECUTION

28
29 Surface Preparation: Just prior to application, thoroughly clean and remove all loose dust,
30 dirt, aggregate and other debris. The entire surface shall be dry and thoroughly broomed
31 from shoulder to shoulder prior to application of asphalt seal coat.

32
33 Application Rate: The application rate may vary from 0.12 to 0.14 gallons per square yard of
34 new asphalt pavement. Apply in accordance with vendor recommendations. Cure time will
35 vary from 1 to 4 hours. Shaded areas may require longer cure times

36
37 Construction Limitations: Seal coat shall not be applied when the surface or weather
38 conditions would prevent proper construction. Seal coating shall not be undertaken unless
39 the pavement temperature is above 60° F, air temperature is at least 70° F and rising, during
40 damp or wet weather, wind velocity less than 15 miles per hour, or after sundown. No seal
41 coat shall be applied before June 15 or after September 1, unless prior written approval is
42 obtained from the Contractor.

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1 Equipment: Equipment shall be in accordance with Section 403.03 (SSHC) and INTEC
2 TPR-P7.5-A1. Standard bituminous distributors may be used. Hand wand applicators may
3 be used. The equipment must be in proper working order, and contain no contaminants or
4 diluents in the tank prior to loading with the seal-coating product. The application equipment
5 must be capable of maintaining predetermined flow rates and constant pressure during
6 application. Necessary precautions shall be taken to prevent overspray of seal coat material
7 onto existing structures.

8
9 Handling Instructions: If the seal-coating product is heated, use steam coils, hot water coils,
10 or hot oil coils with hot oil circulation at less than 200° F. Electrical heating elements may
11 be used but must be moisture and explosion resistant. Open flame or closed flame firetube
12 heaters will not be permitted for heating. The seal coat product should not be heated above
13 100° F. During the heating process, the product must be stirred using a circulation pump, or
14 mechanically agitated to prevent localized overheating. Positive displacement gear pumps
15 are recommended for pumping. Smoking or open flames within 100 feet of the storage
16 containers or application equipment is prohibited.

17
18 FIELD QUALITY CONTROL:

19
20 Surveillance will be performed by the Contractor's Representative to verify compliance of the
21 work to the drawings and specifications.

22
23 END OF SECTION 02576

1 SECTION 02741 – PLANT MIX PAVEMENT

2
3 PART 1--GENERAL

4
5 SUMMARY:

6
7 Provide all work, operations and material required for construction of plant mix paving in
8 accordance with the project drawings and these specifications.

9
10 Section Includes, but is not limited to:

- 11
12 1. Furnish and apply asphalt tack coat.
13 2. Haul, place and compact plant mix asphalt.

14
15 Related Sections include the following:

16
17 02200-Earthwork

18
19 REFERENCES:

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

23
24 AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIALS (AASHTO)

25
26 AASHTO Standard Specifications for Transportation Materials and Methods of
27 Sampling and Testing

28
29 AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

30
31 ASTM D 2922 Standard Test Methods for Density of Soil and Soil-Aggregate In-
32 Place By Nuclear Methods (Shallow Depth)

33
34 IDAHO TRANSPORTATION DEPARTMENT (IID)

35
36 Standard Specifications for Highway Construction (SSHC), 1999 Edition
37 Field Test Manual, Part I, Sampling and Test Methods

38
39 SUBMITTALS:

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

42
43 Mix Design: Submit results of the plant mix design test reports, including sieve test reports
44 for the aggregates to be used on this project. If the proposed mix design has not been used on

1 the INEEL in the past 2 years, a new mix design shall be obtained and tested by an
2 independent laboratory at the expense of the Subcontractor.

3
4 Paving Plan: The Subcontractor shall submit a construction paving work plan detailing the
5 following:

- 6 • Identify equipment to be used to haul, place and compact the plant mix pavement.
- 7 • Construction methods and details for placing and compacting plant mix pavement
8 on slopes as steep as 1.5H:1V. Identify and describe the use of special equipment
9 (ie. winch system) needed for slope operations and how compaction will be
10 achieved.

11
12 Batch Tickets: Plant mix batch plant tickets shall be provided to the Construction
13 Management Point of Contact (POC) for each truckload at the time of delivery. Tickets shall
14 show, at a minimum, the time, temperature, and weight for each load.

15
16 See Section 01300, Submittals and Vendor Data Schedule for additional submittal
17 requirements.

18
19 SYSTEM DESCRIPTION:

20
21 Mix Design: The mix design shall be in accordance with the SSHC.

22
23 Composition of Mixture: The plant mix shall be composed of a mixture of aggregate, filler if
24 required, and asphalt. The plant mix shall be Class III in accordance with SSHC Section 405.
25 The mix design shall be tested by an independent test laboratory and shall meet the following
26 criteria:

27
28 HVEEM Method: (See 405.02 of SSHC)

29
30 Class III Pavement:

31	Stability:	30 minimum
32	Immersion Compression:	85% minimum
33	Air Voids:	3% to 5%
34	Fine Aggregate Angularity:	40

35
36 Aggregate shall comply with SSHC Section 703 and sieve test reports shall be submitted for
37 gradation information.

38
39 The mix design test results including the sieve reports and the design mix shall be in effect
40 unless modified in writing by the Contractor.

41
42 Should a change in sources of material be made, a new mix design shall be established before
43 the new material is used; when unsatisfactory results or other conditions make it necessary,
44 the Contractor may establish a new mix design.

1 QUALITY CONTROL:

2
3 Codes and Standards: Comply with provisions of the following codes, specifications and
4 standards unless otherwise specified herein. Idaho State Specifications are available for
5 inspection at offices of the Idaho Transportation Department, Rigby, Idaho, and the
6 Department of Energy (DOE), Idaho Operations Office.

7

8 AASHTO	Standard Specifications for Transportation Materials and Methods of
9	Sampling and Testing
10 ITD	Standard Specifications for Highway Construction (SSHC)
11	Current Edition
12 ITD	Field Test Manual, Part I, Sampling and Test Methods

13

14 PART 2--PRODUCTS

15
16 Asphalt Binder: PG 58-28 in accordance with Section 702 of the SSHC and AASHTO MP-1

17
18 Crushed Gravel Aggregate: Aggregate for plant mix pavement shall be in accordance with
19 (SSHC) Section 703. The master gradation for aggregate for the ½ in. plant mix pavement
20 shall be as follows:

21

<u>Sieve</u>	<u>Percent Passing</u>
22 ¾"	100
23 ½"	95 - 100
24 3/8"	75 - 90
25 No. 4	50 - 75
26 No. 8	35 - 60
27 No. 30	15 - 35
28 No. 50	10 - 25
29 No. 200	4 - 8

30

31
32 Coarse Aggregate: Sound; angular crushed stone or crushed gravel.

33
34 Fine Aggregate: Sharp-edged, natural sand or sand prepared from stone, gravel, or
35 combinations thereof, tested for sodium sulfate soundness in accordance with AASHTO
36 M 29.

37
38 Tack Coat: Tack coat shall be emulsified asphalt, CSS-1 diluted with one part water to one
39 part emulsified asphalt, meeting the applicable requirements of Section 702 (SSHC).

40
41 Plant Mix: Dense, hot-laid, plant mix complying with SSHC. Provide mixes with a history of
42 satisfactory performance at the INEEL.

1 PART 3--EXECUTION

2
3 JOB CONDITIONS:

4
5 Numerous small buildings, structures and protrusions (i.e., valve boxes, wells, piping, etc.)
6 are located in the areas to be paved. Many of the valve boxes have multiple conduits or other
7 small vertical pipe risers surrounding them that are not shown on the plans. Various types of
8 structures exist to which the asphalt may be placed adjacent to include gravel, concrete,
9 asphalt, wood, polyolefin geomembrane liner and metal.

10
11 Tank Farm Load Restrictions: In the tank farm area, stringent load restrictions have been
12 established. All operations and equipment shall be in accordance with the attached INTEC
13 Technical Procedure INTEC-TPR-P7.5-A1 and drawing 097726, which identifies the tank
14 farm load zones.

15
16 Environmental Limitations: Plant mix material shall not be placed on a wet or frozen surface,
17 when the air temperature is below 40 deg F, or when weather or surface conditions otherwise
18 prevent the proper handling or finishing of the plant mix material.

19
20 EXAMINATION:

21
22 Verify that the subgrade is compact and follows the lines and grades shown on the plan.
23 Proceed with paving only after unsatisfactory conditions have been corrected.

24
25 SURFACE PREPARATION:

26
27 Subgrade: Preparation of the subgrade upon which the plant mix pavement is to rest shall be
28 in accordance with Section 02200, "EARTHWORK."

29
30 Tack Coat: Apply to contact surfaces of previously constructed asphalt, steel or portland
31 cement concrete and surfaces abutting or projecting into asphalt pavement. Distribute at rate
32 of 0.10 gal per sq. yd. of surface.

33
34 Allow to dry until the tack coat has reached the proper condition to receive paving. Avoid
35 smearing or staining adjoining surfaces, appurtenances, and surroundings. Remove spillages
36 and clean affected surfaces.

37
38 PLACING AND FINISHING PLANT MIX PAVEMENT:

39
40 General: The temperature of the plant mix shall not drop more than 20 deg F between the hot
41 plant and the paver. The material shall be placed to the specified thickness. Placing of the
42 paving mixture shall be as continuous as possible. Due to the numerous structures and
43 interferences on the tank farm, hand placement and compaction will be required.

44

1 **Equipment used to for rolling/compacting the plant mix shall be in accordance with the**
2 **attached INTEC Technical Procedure.** The plant mix shall be spread uniformly and
3 without segregation across the entire width of the area where the pavement is required.
4 Compaction of the pavement shall continue until the pavement density is 90% of that
5 specified in the approved laboratory report. Testing of the plant mix density will be
6 performed according to Idaho Transportation Department Method of Test T125 (Nuclear
7 Densimeter) in all areas except the steep slope around C-40 valve box.

8
9 The Subcontractor shall "rake" all edges to ensure the availability of a sufficient number of
10 fines to seal the joints.

11
12 Hand-Spreadinn in Lieu of Machine-Spreading: In areas where the use of machine spreading
13 is impractical or limited by load restrictions, the mixture shall be spread by hand. The range
14 of temperatures of the mixtures when dumped onto the area to be paved shall be between 250
15 and 300 degrees F. Mixtures having temperatures less than minimum spreading temperature
16 when dumped onto the area to be paved will be rejected. Spread hot mixture with rakes in a
17 uniformly loose layer of a thickness that, when compacted, will conform to the required
18 grade, thickness, and smoothness. During hand spreading, place each shovelful of mixture by
19 turning the shovel over in a manner that will prevent segregation. Do not place mixture by
20 throwing or broadcasting from a shovel. Do not dump loads any faster than can be properly
21 handled by the shovelers and rakers.

22
23 Joints: Longitudinal joints shall be smooth, straight, and show no segregation of material.
24 Should irregularities in the edge of the surface appear, the previously laid asphalt shall be cut
25 back to a vertical face before placing adjacent material. Any material removed in cutting back
26 the course to a vertical face shall be removed and wasted.

27
28 Transverse joints shall be formed by cutting back on the previous run or existing asphalt to
29 expose the full depth of the course. A brush coat of CSS-1 emulsified asphalt shall be used
30 on contact surfaces of transverse joints, cold longitudinal joints, and existing asphalt edges
31 just before additional mixture is placed.

32
33 Cuts shall be straight and clean.

34
35 FIELD QUALITY CONTROL:

36
37 Contractor Supplied Testing: The following tests may be performed by others at no cost to
38 the Subcontractor:

- 39
40 1. AASHTO T238 (ASTM D 2922) for moisture-density relationship of base course in-
41 place and plant mix pavement in-place.
42 2. Idaho T125 (Nuclear Densimeter) for plant mix pavement in-place density.
43

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- 1 Surveillance will be performed by the Contractor's Representative to verify compliance of the
- 2 work to the drawings and specifications.
- 3
- 4 END OF SECTION 02741

SUBCONTRACT NO. XXXXX

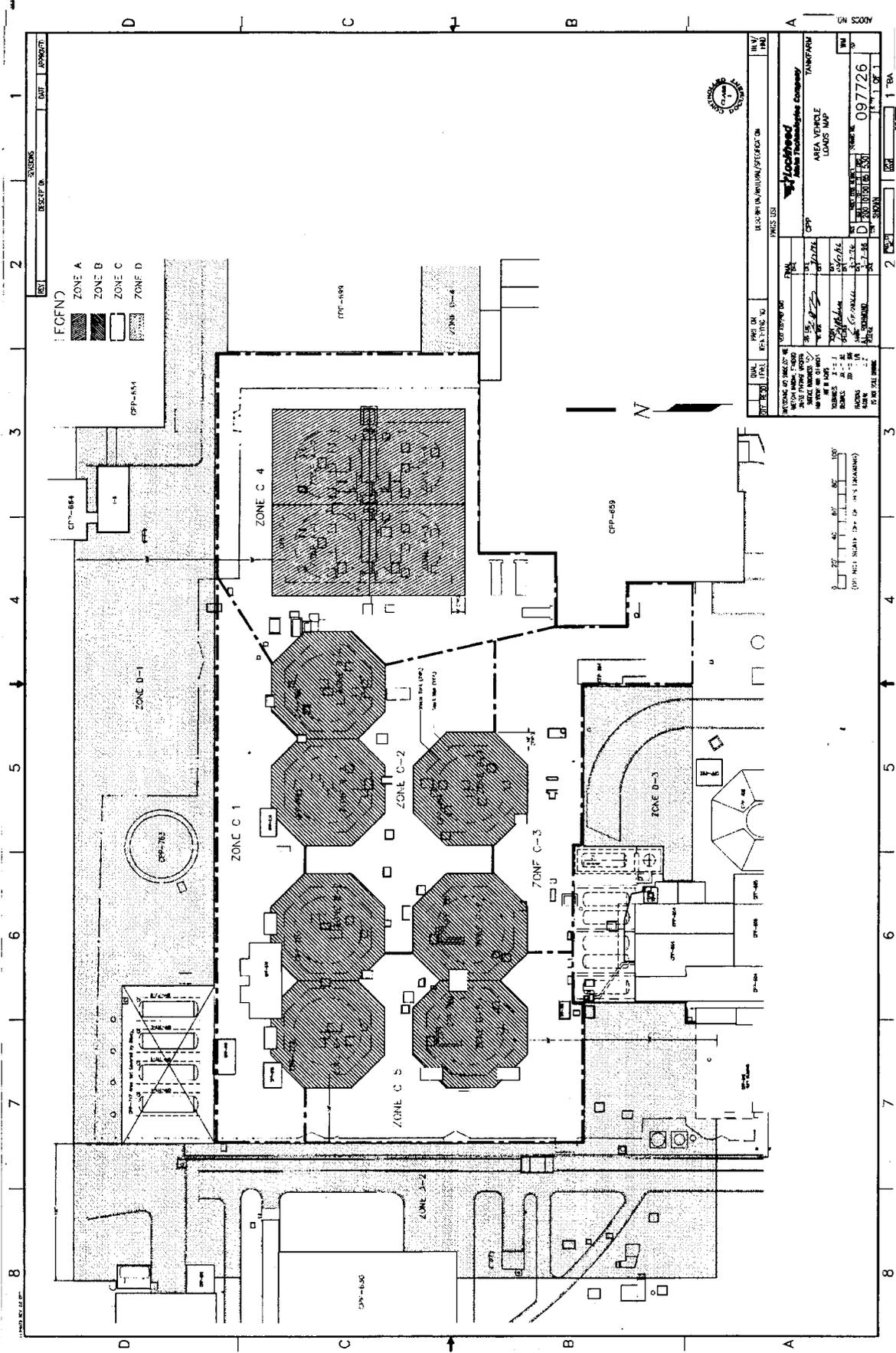
SCHEDULE "X"

The Government will furnish to the Subcontractor at no cost the equipment or material listed below. The equipment or material may be obtained by the Subcontractor at the time he is ready to make the Installation in accordance with the provisions of the contract.

The items will be available only during normal working hours and a twenty-four (24) hour minimum advance notice (Saturdays, Sundays, and holidays excluded) to the Construction Coordinator (STR) will be required.

Transportation costs shall be the responsibility of the Subcontractor.

Item No.	Description	Quantity	Turnover Location	Reference	Approximate cost	Date Available
1	HDPE Ballast Tubes	36	Location of installation	<u>Dwg. C-1/</u> <u>Spec 02430</u>	N/A	TBD



(FCFN)

- ZONE A
- ZONE B
- ZONE C
- ZONE D



DATE	2	DATE	1
DESCRIPTION	DESCRIPTION		
SCALE	1" = 100'	SCALE	1" = 100'
PROJECT NO.	097726	PROJECT NO.	097726
DATE	10/16/83	DATE	10/16/83
BY	J. J. ...	BY	J. J. ...
CHECKED BY	...	CHECKED BY	...
DESIGNED BY	...	DESIGNED BY	...
APPROVED BY	...	APPROVED BY	...
COMPANY	Lockheed Martin Technology Company	COMPANY	Lockheed Martin Technology Company
AREA	AREA VEHICLE TANKFARM	AREA	AREA VEHICLE TANKFARM
PROJECT	PROJECT	PROJECT	PROJECT
DATE	DATE	DATE	DATE
BY	BY	BY	BY
CHECKED BY	CHECKED BY	CHECKED BY	CHECKED BY
DESIGNED BY	DESIGNED BY	DESIGNED BY	DESIGNED BY
APPROVED BY	APPROVED BY	APPROVED BY	APPROVED BY